

# 2023 RBWH Research Report

## Surgical and Perioperative Services



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Published by the State of Queensland (Metro North Hospital and Health Service), April 2024

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## Surgical and Perioperative Services



### **Dr Barry O'Loughlin** **Executive Director of Surgical & Perioperative Services**

2023 was another year of strong research output from departments in Surgical and Perioperative Services. Traditional partnerships with the University of Queensland and the Queensland University of Technology were enhanced by collaboration with the research institutes on campus – in particular the Jamieson Trauma Institute, Herston Biofabrication Institute and Metro North Breast Cancer Institute.

Highlights of the year include the Department of Anaesthesia and Perioperative Medicine receiving over \$1.5 million in grant funding which enabled significant research study. This resulted in 39 journal publications, two book chapters and many podium presentations at national and international conferences.

A collaboration between the General Surgery Breast and Endocrine Unit and the Herston Biofabrication Institute saw finalisation of recruitment of patients to the Breast Scaffold Clinical Trial. This world-first study is designed to assess safety, feasibility and long-term outcomes for use of an absorbable scaffold in breast reconstruction. This work was driven by Professor Owen Ung and Dr Michael Wagels.

Dr Ryan Sommerville, Department of Otorhinolaryngology, was awarded a major grant from the Garnett Passe and Rodney Williams Memorial Foundation to investigate high resolution imaging for head and neck and skull-base conditions.

Dr Murray Ogg and collaborators, Department of Vascular Surgery, received a \$1 million grant from the Medical Research Future Fund to investigate a home-based exercise program for managing peripheral vascular disease.

Associate Professor Matthew Roberts from the Department of Urology was successful in receiving a significant grant from the Queensland Technology Futures Fund to support introduction of the Nanoknife for the management of prostate cancer.

A number of staff of the service line were the recipients of important awards during 2023. These included Professor Victoria Eley who received the prestigious Australian and New Zealand College of Anaesthetists John Boyd Craig Research award to support a highly ranked pain-related research project.

Congratulations to medical staff of the service line who were listed amongst the top two percent most cited authors in the Stanford University research rankings. These included Professors Tim Sullivan, Andrew Stevenson, Andre Zundert, Associate Professors Martin Batstone, Matthew Roberts and Kevin Tetsworth.

# Anaesthesia and Perioperative Medicine

## Research Highlights

Our department continues to be successful in developing a strong research culture through the Research Interest Group in Anaesthesia (RIGA) chaired by Professor Victoria Eley. We aim to increase our group of researchers to achieve more scientific, patient-centred research outcomes. There is steady growth in our research activity involving collaborations at state, national, and international levels. At departmental level we provide novice and continuing researchers with mentorship and group support.

The department has been awarded a significant increase to over \$1,512,000 in grant funding for our 15 departmentally led research studies and 18 projects involving collaborative activities. Our research output has resulted in 40 journal publications and 2 book chapters. We have been well represented at national and international conferences with many topical presentations. Our higher degree students are progressing well with their PhD projects, and we look forward to the completion of their studies.

We have been successful in receiving multiple research awards and proudly announce the following successes:

Professor Andre van Zundert has contributed significantly to anaesthesia and education and has been awarded the ANZCA Lennard Travers Professorship, and Fellowships by the University of Queensland and the American Society of Regional Anesthesia and Pain Medicine. He has also been listed as among the World's Top 2% most-cited scientists by Stanford University rankings 2023.

Professor Victoria Eley is the recipient of the prestigious Australian and New Zealand College of Anaesthetists' (ANZCA) John Boyd Craig Research award 2023 to an outstanding applicant to support a highly ranked pain-related research grant, in honour of Dr John Boyd Craig.

Dr Nathan Peters has achieved several outstanding awards for his work using ultrasound to improve performance in anaesthesia: The Australasian Society for Ultrasound in Medicine (ASUM) Article of the Year 2023, the UQ Medical School Publication Award 2023, the ANZCA Gilbert Brown Prize 2023, and the Australia Sonography Association Best Overall Research Presentation 2023. Dr Michelle Roets has received the Patricia Mackay Memorial ANZCA Research award for a high-ranking research project.

Our diverse programme of research studies that continues into 2024 is designed to optimise anaesthetic care and patient outcomes. Our research addresses a variety of topics including drug actions, the novel use of medications for optimal pain relief, the delivery of different types of anaesthesia for effective patient outcomes, employment of ultrasound techniques to improve practice, anaemia in chronic pain patients, evaluation of blood pressure monitoring to determine accuracy in bariatric patients, and investigation of perioperative hypothermia to assess incidence and patient impact. Several of our studies importantly include high risk patient populations, namely those with cancer, pregnant women, and bariatric patients. We continue to perform world class research that supports our strong research infrastructure established in Surgical and Perioperative Services to support best practice in anaesthesia.

## Research Awards and Achievements

| Recipient (RBWH staff in bold) | Award  | Event  |
|--------------------------------|--|--|
| <b>Andre van Zundert</b>       | 2023 Fellowship of Higher Education Academy (HEA)  | UQ recognition of attainment against UK Professional Standards Framework for teaching and learning support in higher education |
| <b>Andre van Zundert</b>       | Lennard Travers Professorship  | ANZCA Award providing support to enhance knowledge in anaesthesia  |
| <b>Andre van Zundert</b>       | 2023 Fellowship of American Society of Regional Anesthesia and Pain Medicine                       | American Society's recognition of contribution to anaesthesia  |
| <b>Andre van Zundert</b>       | Listed as among the World's Top 2% most-cited scientists list by Stanford University rankings 2023 | International scientific recognition as Editorial Board Member from Healthcare Journal   |
| <b>Victoria Eley</b>           | John Boyd Craig Research Award 2023  | ANZCA award to an outstanding applicant to support a highly ranked pain-related research grant in honour of Dr John Boyd Craig |
| <b>Nathan Peters</b>           | Australasian Society for Ultrasound in Medicine (ASUM) Article of the Year 2023                    | Article: Remotely supervised ultrasound-guided peripheral intravenous cannulation training                                     |

| Recipient (RBWH staff in bold) | Award   | Event  |
|--------------------------------|---|--|
| <b>Nathan Peters</b>           | Medical School Publication Award 2023   | University of Queensland award of \$3,000 to support research career development   |
| <b>Nathan Peters</b>           | Australian and New Zealand College of Anaesthetists (ANCA) Gilbert Brown Prize 2023 | Fellow judged to make the best contribution to the free research paper session at the ANZCA Annual Scientific Meeting, 2023 Sydney |
| <b>Nathan Peters</b>           | Best presentation within their category with \$1,000 prize                          | Mayne Academy of UQ Research Day 23/08/2023  |
| <b>Nathan Peters</b>           | Australia Sonography Association Best Overall Research Presentation                 | Annual Scientific Meeting, 2023 Brisbane   |
| <b>Adrian Chin</b>             | Best presentation within their category with \$1,000 prize                          | Mayne Academy of UQ Research Day 23/08/2023  |
| <b>Michelle Roets</b>          | Patricia Mackay Memorial Research Award   | ANZCA award that supports a highly ranked grant for quality and safety in patient outcomes   |

## Research Grants

| Investigator Names (RBWH staff in bold)   | RBWH Departments / Research Groups                   | Research Project Title  | Granting Body  | Total Awarded (whole all years) | Length of Awards in years and years active |
|---|--|---|--|---------------------------------|--|
| <b>Kerstin Wyssusek, Christine Woods, Liam Busuttin, Gerard Eames</b>   | Department of Anaesthesia & Perioperative Medicine   | Implementation of a scenario-based simulated program for Pyxis™ Anesthesia Stations within a hospital setting to improve acceptability, usability, and operational training requirements: A mixed-methods observational study | Becton Dickson   | \$123,000                       | 2 years, 2021-2023                         |
| <b>Michelle Roets, Melinda Dean, David Sturgess, Kerstin Wyssusek, Robert Flower, John-Paul Tung, Alexis Perros, Andre van Zundert</b>            | Department Anaesthesia & Perioperative Medicine      | GENetic profiling: Understanding the outcomes and mechanisms associated with reduced immune paralysis when Intraoperative Cell Salvage is used as an alternative to allogeneic (donated) blood transfusion (GEN-MICS)         | ANZCA project Grant  | \$66,500                        | 2 years, 2021-2023                         |
| Victoria Eley, Severine Navarro, Elizabeth Martin, Gunter Hartel, <b>Akwasi Amoako, Jason Roberts, Jeffrey Lipman, Leonie Callaway, Mimi Tang</b> | Department Anaesthesia and Perioperative Medicine    | Do pre-delivery antibiotics affect the neonatal microbiome and immune system? Intravenous Cefazolin v Placebo before elective caesarean section: ASCENT RCT Feasibility Study   | Children's Hospital Foundation Early Career Research Project-Support: The University of Queensland | \$50,000                        | 2 years, 2021-2023                         |
| <b>Victoria Eley</b>  | Department of Anaesthesia and Perioperative Medicine | Clinical Research Fellowship  | Metro North Hospital and Health Services   | \$450,000                       | 3 years, 2021-2024                         |
| <b>Kerstin Wyssusek, Paul Gray, Christine Woods, Anita Pelecanos, Julie Lee, Michelle Spanevello</b>  | Department of Anaesthesia and Perioperative Medicine | Intravenous iron infusion therapy in chronic pain patients with iron deficiency: VITAL, a randomised controlled trial   | Pharmacosmos   | \$79,860.24                     | 2 years, 2021-2023                         |

| Investigator Names<br>(RBWH staff in bold)   | RBWH<br>Departments /<br>Research<br>Groups          | Research Project Title  | Granting Body                                     | Total<br>Awarded<br>(whole all<br>years) | Length of<br>Awards in<br>years and<br>years<br>active |
|--|--|---|---|--|--|
| <b>Anthony Hodge, Jason Roberts, Victoria Eley,</b> Steven Wallis, <b>Angela Tognolini</b>   | Department of Anaesthesia and Perioperative Medicine | Pharmacokinetic profile of sugammadex in the obstetric population   | ANZCA Novice Investigator Grant                   | \$19,999                                 | 1 year,<br>2022-2023                                   |
| <b>Anthony Hodge, Jason Roberts, Victoria Eley,</b> Steven Wallis, <b>Angela Tognolini</b>   | Department of Anaesthesia and Perioperative Medicine | Pharmacokinetic profile and breastmilk excretion of sugammadex in pregnant women  | RBWH and RBWH Foundation Research Project Grant   | \$74,903.85                              | 1 year,<br>2022-2023                                   |
| <b>Chris Futter, Kerstin Wyssusek</b>  | Department of Anaesthesia and Perioperative Medicine | The use of head mounted displays to improve quality and safety within an operating theatre environment  | Jamieson Trauma Institute Project Funding         | \$161,000                                | 4 years,<br>2019-2023                                  |
| <b>Victoria Eley</b>   | Department of Anaesthesia and Perioperative Medicine | Optimising perioperative blood pressure measurement in obese patients: a program of research  | ANZCA Academic Enhancement Grant                  | \$100,000                                | 3 years,<br>2020-2023                                  |
| <b>Julie Lee</b>   | Department of Anaesthesia and Perioperative Medicine | Comparative pharmacokinetics of nebulised and intravenous ketamine and dexmedetomidine in ventilated patients   | ANZCA Robin Smallwood Bequest                     | \$66,165                                 | 1 year,<br>2023  |
| <b>Michelle Roets</b>  | Department of Anaesthesia and Perioperative Medicine | How effective is intraoperative cell salvage (ICS) and a leuco-depletion filter (LDF) in removing cancer cells and bacteria during pelvic exenteration surgery? | The Patricia Mackay Memorial ANZCA Research award | \$66,231                                 | 1 year,<br>2023-2024                                   |
| <b>Michelle Roets</b>  | Department of Anaesthesia and Perioperative Medicine | Travel to Network for the Advancement of Patient Blood Management, Haemostasis and Thrombosis Symposium, Greece to report on cell salvage                       | University of Queensland Travel Award             | \$4000                                   | 1 year,<br>2023  |
| <b>Michael Boules, Alison Mudge, Jonathon Fanning,</b> Stuart McDonald, <b>Lisbeth Evered, David Sturgess, André van Zundert, Anita Pelecanos, Victoria Eley</b> | Department of Anaesthesia and Perioperative Medicine | PONI Study: Postoperative neural injury in non-neurosurgical procedures: A prospective observational study of elective vitrectomy in patients 60 years or older | Mayne Academy of Critical Care Research           | \$10,000                                 | 1 year,<br>2023  |
| <b>Anthony Eidan, Gladness Nethathe, Christine Woods,</b> John Riordan, <b>Fraser Morton, Jessica Lim,</b> Michael Toon  | Department of Anaesthesia and Perioperative Medicine | Quality of recovery comparison between opioid-free anaesthesia and opioid-containing anaesthesia for elective laparoscopic surgery: the OFA Study               | ANZCA Novice Grant                                | \$19,134                                 | 1 year,<br>2023  |
| <b>Victoria Eley, Christoph Lehner,</b> Elizabeth Martin, Nigel Lee, <b>Tim Donovan, Jayesh Dhanani, Jason Roberts</b>   | Department of Anaesthesia and Perioperative Medicine | Nebulised fentanyl for labour pain – a pharmacokinetic and feasibility study  | ANZCA Project Grant                               | \$63,483                                 | 1 year,<br>2023-2024                                   |

| Investigator Names<br>(RBWH staff in bold)   | RBWH<br>Departments /<br>Research<br>Groups          | Research Project Title   | Granting Body       | Total<br>Awarded<br>(whole all<br>years) | Length of<br>Awards in<br>years and<br>years<br>active |
|--|--|--|---------------------|--|--|
| <b>Lauren Kearney, Victoria Eley, Deanne August, Christoph Lehner, Bec Jenkinson, Amanda Ullman, Nicole Marsh, Rachel Nugent, Nigel Lee, Susan de Jersey, John Thompson, Jean Spinks</b> | Department of Anaesthesia and Perioperative Medicine | Fluids in labour: Ensuring Maternal Euvolaemia (FLUME) study   | RBWH SERTA Grant    | \$70,000                                 | 1 year, 2023-2024                                      |
| <b>Fraser Morton, Michael Busser, Victoria Eley</b>  | Department of Anaesthesia and Perioperative Medicine | The relationship between hunger and gastric volumes assessed by ultrasound in patients with an acute abdomen | ANZCA Project Grant | \$17,808                                 | 1 year, 2023   |
| <b>Andre van Zundert</b>   | Department of Anaesthesia and Perioperative Medicine | Anaesthesia reversal agents: Investigating a presynaptic target mechanism                                    | ANZCA Project Grant | \$70,000                                 | 1 year, 2023-2024                                      |

### Current RBWH Department / Research Group Led Research Activity

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold)  | Research Project Title  | Number of RBWH Patients Recruited in 2023 |
|---|---|---|---|
| <b>Nathan Peters</b>                        | <b>Joel Thomas, Nicole Marsh, Christine Woods</b>   | Afterhours Difficult IntraVenous Access (DIVA) doctors - A feasibility study of virtual supervision for resident medical officers at the RBWH completing ultrasound guided peripheral intravenous cannulation (USGPV) competency                              |   |
| <b>Andrew Souness</b>                       | <b>Angela Tognolini, Dwane Jackson, Kerstin Wyssusek, David Taylor, Craig Harris, Rachel Esler, Nicholas Black</b>                      | Near-infrared spectroscopy (NIRS) monitoring for early detection of lower limb ischaemia in pelvic exenteration surgery   |   |
| <b>Angela Tognolini</b>                     | <b>Anthony Hodge, Victoria Eley, Adrian Chin, David Belavy, Elizabeth Martin, Christine Woods</b>                                       | Prospective observational study of the anaesthetic and perioperative management of patients with confirmed or suspected coronavirus disease 2019 (COVID-19)   |   |
| <b>Victoria Eley</b>                        | <b>Adrian Chin, Anita Pelecanos, George Hopkins, Moe Thuzar, Severine Navarro, Michael Stowasser</b>                                    | BEAM and BEAM Plus: BP error and Arm Morphology Studies   | 79  |
| <b>Fraser Morton</b>                        | <b>Victoria Eley, Matthys Campher, Emma Ballard, David Cavallucci, Nathan Peters, Peter Van de Putte</b>                                | GASTRIC ULTRASOUND STUDY: The relationship between hunger and gastric volumes assessed by ultrasound in patients with acute abdomens  | 45  |
| <b>Nathan Peters</b>                        | <b>Frances Williamson, Michelle Bauer, Peter Snelling, Nicole Marsh, Stacey Llewellyn, Adam Stewart, Patrick Harris, Claire Rickard</b> | ULTIMO: Non-inferiority of low-level versus high-level disinfection for elimination of bacteria on contaminated ultrasound transducers: A randomised controlled trial   | 654                                       |
| <b>Victoria Eley</b>                        | <b>Rebecca Christensen, Helen Barrett, Michael Stowasser, Matthew Smith, Andre van Zundert</b>  | CLEARSITE IN PREGNANCY: A validation study of blood pressure readings from the Clearsite finger-cuff compared with invasive blood pressure readings in pregnant women undergoing elective Caesarean section, who have arms which don't suit regular arm cuffs | 5   |

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold)  | Research Project Title  | Number of RBWH Patients Recruited in 2023 |
|---|---|---|---|
| <b>Victoria Eley</b>                        | <b>Nathan Peters, Christine Woods,</b> Anita Pelecanos, <b>Teal Derboghossian, Tony Lightfoot, Murray Ogg,</b> Claire Rickard, <b>Adrian Chin</b> | TARTAN: Thrombus after <b>AR</b> TeriAl liNes: Incidence of radial arterial thrombus following arterial line catheterization – an audit of clinical practice and the patient experience   | 120                                       |
| <b>Victoria Eley</b>                        | Severine Navarro, Elizabeth Martin, Gunter Hartel, <b>Akwasi Amoako, Jeffrey Lipman, Jason Roberts, Leonie Callaway,</b> Mimi Tang                | ASCENT: Intravenous cefazolin vs placebo for pre-incision prophylaxis in very low risk women undergoing elective caesarean section: RCT Pilot Feasibility Study                           | 30  |
| <b>Anthony Hodge</b>                        | <b>Jason Roberts, Victoria Eley,</b> Steven Wallis, <b>Angela Tognolini</b>   | Pharmacokinetic profile of sugammadex in the obstetric population   | 6   |
| <b>Anthony Eidan</b>                        | Geraldine Griffiths, <b>Victoria Eley, Gladness Nathathe, Christine Woods, Fraser Morton,</b> John Riordan, Adam Cowan, Anna Surla                | OFA: Comparison of opioid versus opioid-free anaesthesia for elective laparoscopic abdominal surgery  | 45  |
| <b>Kerstin Wyssusek</b>                     | <b>Paul Gray, Christine Woods, Julie Lee, Anita</b> Pelecanos, Greg Anderson  | VITAL: The efficacy of IntraVenous Iron Therapy in persistent pAin patients with iron deficiency: a randomised controlled trial   | 17  |
| <b>Adrian Chin</b>                          | <b>Victoria Eley, David Belavy, Angela Tognolini,</b> Anita Pelecanos, <b>Christine Woods,</b> Gunjan Chawla, Sheridan Bell, Ivan Rapchuk         | A prospective, observational study of anaesthesia healthcare workers' interactions with COVID-19 positive patients and the occupational risk factors associated with contracting COVID-19 |   |
| <b>Julie Lee</b>                            | <b>Jayesh Dhanani, Victoria Eley, Jason Roberts,</b> Steven Wallis, Mohammed Abdul-Aziz   | Comparative pharmacokinetics of nebulised and intravenous ketamine and dexmedetomidine in ventilated patients   |   |
| <b>Victoria Eley</b>                        |   | ABS-Road Analysis of state-wide ABS data regarding obesity and anaesthesia technique  |   |

## Collaborative Research Activity Involving RBWH Department / Research Group

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold)   | Research Project Title  | Number of RBWH Patients Recruited in 2023 |
|---|--|---|---|
| <b>Fraser Morton</b>                        | <b>Victoria Eley,</b> Matthys Campher, Emma Ballard, <b>David Cavallucci, Nathan Peters,</b> Peter Van de Putte                                | GASTRIC ULTRASOUND STUDY: The relationship between hunger and gastric volumes assessed by ultrasound in patients with acute abdomens                                  | 45  |
| Bernhard Riedel                             | David Story, Alexander Heriot, Gavin Wright, Daniel Sessler, Donal Buggy, Jonathan Hiller, Julia Dubowitz, <b>Victoria Eley</b>                | VAPOR-C: Volatile Anaesthesia and Perioperative Outcomes Related to Cancer  | 6   |
| Paul Myles                                  | Wendy Brown, Mark Shulman, Trisha Peel, Robert Medcalf, Jessica Kasza, Sophie Wallace, <b>Julie Lee</b>  | TRIGS: Tranexamic acid to Reduce Infection after Gastrointestinal Surgery   | 86  |
| <b>Nathan Peters</b>                        | <b>Frances Williamson,</b> Michelle Bauer, <b>Peter Snelling, Nicole Marsh,</b> Stacey Llewellyn, Adam Stewart, Patrick Harris, Claire Rickard | ULTIMO: Non-inferiority of low-level versus high-level disinfection for elimination of bacteria on contaminated ultrasound transducers: A randomised controlled trial | 654                                       |
| <b>Chris Futter, Alvin Obed</b>             | Paul Schlosser, Penelope Sanderson, <b>Christine Woods, Kerstin Wyssusek</b>   | The use of head-mounted displays to detect patient deterioration in a simulated trauma setting  |   |



| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold)  | Research Project Title   | Number of RBWH Patients Recruited in 2023 |
|---|---|--|---|
| Peter Mitchell                              | Bruce Campbell, Sarah Lee, Robert Henderson, Andrew Morokoff, <b>Wendy Morris</b>   | STENTRODE WITH THOUGHT CONTROLLED DIGITAL SWITCH: Early feasibility study (EFS) of the safety of the StentrodeTM1 device in participants with loss of motor function due to paralysis from spinal cord injury, motor neuron disease, stroke, muscular dystrophy or loss of limbs |   |
| <b>Victoria Eley</b>                        | <b>Adrian Chin, Anita Pelecanos, George Hopkins,</b> Moe Thuzar, Severine Navarro, Michael Stowasser  | BEAM and BEAM Plus: BP error and Arm Morphology Studies  | 79  |
| <b>Michael Pender</b>                       | <b>Kerstin Wyssusek, Anthony Hade</b>   | A Phase 1, Two-Part, Open-Label Dose-Escalation and Double-blind, Placebo-Controlled Dose-Expansion Study with an Open Label Extensions to Evaluate the Safety and Efficacy of ATA-188 in Subjects with Progressive Multiple Sclerosis   | 2   |
| <b>Victoria Eley</b>                        | <b>Rebecca Christensen, Helen Barrett,</b> Michael Stowasser, <b>Matthew Smith, Andre van Zundert</b>   | CLEARSITE IN PREGNANCY: A validation study of blood pressure readings from the Clearsite finger-cuff compared with invasive blood pressure readings in pregnant women undergoing elective Caesarean section, who have arms which don't suit regular arm cuffs                    | 5   |
| <b>Victoria Eley</b>                        | <b>Nathan Peters, Christine Woods,</b> Anita Pelecanos, <b>Teal Derboghossian, Tony Lightfoot, Murray Ogg, Claire Rickard, Adrian Chin</b>  | TARTAN: Thrombus after <b>AR</b> TeriAl liNes: Incidence of radial arterial thrombus following arterial line catheterization – an audit of clinical practice and the patient experience  | 120                                       |
| <b>Victoria Eley</b>                        | Severine Navarro, Elizabeth Martin, Gunter Hartel, <b>Akwasi Amoako, Jeffrey Lipman, Jason Roberts, Leonie Callaway,</b> Mimi Tang  | ASCENT: Intravenous cefazolin vs placebo for pre-incision prophylaxis in very low risk women undergoing elective caesarean section: RCT Pilot Feasibility Study  | 19  |
| <b>Anthony Hodge</b>                        | <b>Jason Roberts, Victoria Eley,</b> Steven Wallis, <b>Angela Tognolini</b>   | Pharmacokinetic profile of sugammadex in the obstetric population  | 3   |
| Anthony Eidan                               | Geraldine Griffiths, <b>Victoria Eley, Gladness Nathathe, Christine Woods, Fraser Morton,</b> John Riordan, Adam Cowan, Anna Surla  | OFA: Comparison of opioid versus opioid-free anaesthesia for elective laparoscopic abdominal surgery   | 35  |
| <b>Kerstin Wyssusek</b>                     | <b>Paul Gray, Christine Woods, Julie Lee, Anita Pelecanos,</b> Greg Anderson  | VITAL: The efficacy of IntraVenous Iron Therapy in persistent pAin patients with iron deficiency: a randomised controlled trial  | 17  |
| <b>Adrian Chin</b>                          | <b>Victoria Eley, David Belavy, Angela Tognolini, Anita Pelecanos, Christine Woods,</b> Gunjan Chawla, Sheridan Bell, Ivan Rapchuk  | A prospective, observational study of anaesthesia healthcare workers' interactions with COVID-19 positive patients and the occupational risk factors associated with contracting COVID-19  |   |
| <b>Julie Lee</b>                            | <b>Jayesh Dhanani, Victoria Eley, Jason Roberts,</b> Steven Wallis, Mohammed Abdul-Aziz   | Comparative pharmacokinetics of nebulised and intravenous ketamine and dexmedetomidine in ventilated patients  |   |
| <b>Michelle Roets</b>                       | Melinda Dean, <b>Angela Tognolini, Craig Harris, Mahendra Singh,</b> Peter Simpson, Andrew Dalley, David Sturgess, <b>Vicki Swaine, Christine Woods, Rhys Morgan, Peter Steyn, Patrick Harris, Michael Thomas</b> | How effective is intraoperative cell salvage (ICS) and a leuco-depletion filter (LDF) in removing cancer cells and bacteria during pelvic exenteration surgery? The C-I-ICS Study  |   |

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold)  | Research Project Title  | Number of RBWH Patients Recruited in 2023 |
|---|---|---|---|
| <b>Michelle Roets</b>                       | Melinda Dean, David Sturgess, Robert Flower, John-Paul Tung, Alexis Perros, <b>Christine Woods</b> , <b>Andre van Zundert</b> | <b>GENetic</b> profiling: <b>Outcome</b> , <b>Mechanism</b> and <b>Immunity</b> , compare intraoperative <b>Cell Salvage</b> and allogeneic blood transfusion |   |

## Research Publications

### Authors

| Investigator      | ORCID ID  | Investigator      | ORCID ID  |
|-------------------|---|-------------------|---|
| Andre van Zundert | <a href="https://orcid.org/0000-0002-1836-6831">https://orcid.org/0000-0002-1836-6831</a> | Gladness Nethathe | <a href="https://orcid.org/0000-0001-6875-8422">https://orcid.org/0000-0001-6875-8422</a> |
| Victoria Eley     | <a href="https://orcid.org/0000-0002-6715-9193">https://orcid.org/0000-0002-6715-9193</a> | Nathan Peters     | <a href="https://orcid.org/0000-0002-3431-6815">https://orcid.org/0000-0002-3431-6815</a> |
| Julie Lee         | <a href="https://orcid.org/0000-0002-6896-5568">https://orcid.org/0000-0002-6896-5568</a> | Louis Guy         | <a href="https://orcid.org/0000-0001-7954-4534">https://orcid.org/0000-0001-7954-4534</a> |
| Kerstin Wyssusek  | <a href="https://orcid.org/0000-0003-1709-4958">https://orcid.org/0000-0003-1709-4958</a> | Angela Tognolini  | <a href="https://orcid.org/0000-0002-8847-7422">https://orcid.org/0000-0002-8847-7422</a> |
| Christine Woods   | <a href="https://orcid.org/0000-0003-4697-3855">https://orcid.org/0000-0003-4697-3855</a> | Anthony Hade      | <a href="https://orcid.org/0000-0003-3467-5041">https://orcid.org/0000-0003-3467-5041</a> |
| Heather Reynolds  | <a href="https://orcid.org/0000-0002-1435-8260">https://orcid.org/0000-0002-1435-8260</a> | Michael Boules    | <a href="https://orcid.org/0000-0001-5070-5402">https://orcid.org/0000-0001-5070-5402</a> |
| Adrian Chin       | <a href="https://orcid.org/0000-0002-6715-9913">https://orcid.org/0000-0002-6715-9913</a> | Anthony Hodge     | <a href="https://orcid.org/0000-0002-3969-1916">https://orcid.org/0000-0002-3969-1916</a> |
| Michelle Roets    | <a href="https://orcid.org/0000-0002-0882-9636">https://orcid.org/0000-0002-0882-9636</a> | Sue Lawrence      | <a href="https://orcid.org/0000-0001-9798-631X">https://orcid.org/0000-0001-9798-631X</a> |

### Publications in 2023

#### Journal Articles (RBWH staff in bold)

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## Book Chapters (RBWH staff in bold)

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Meeusen V, Gatt S, Barach P, **van Zundert A**. Occupational Wellbeing, Resilience, Burnout and Job Satisfaction of Surgical Teams. In: Sanchez JA, Higgins RSD, Kent PS (eds), Handbook of Perioperative and Procedural Patient Safety, Elsevier, USA 2023, pp. 205-230.

## Keynote or Plenary Lectures given in 2023

| Date  | Title  |
|---|--|
| 5th International Conference on Algorithms - University of Oxford, Oxford, UK, August 2023  | The green footprint of anesthesiology – where can anesthesiologists contribute? <b>Andre van Zundert</b>   |
| Annual Meeting of the Indonesian Society of Anesthesiology and Intensive Therapy, Lampung, Indonesia, November 2023                             | Role of sedation using propofol; Sufentanil in general anaesthesia; Regional Anaesthesia Adjunctive Pain Relief: what can we add?; Segmental Thoracic Spinal Anaesthesia: How high can you go? <b>Andre van Zundert</b>  |
| 6th World Congress on Regional Anaesthesia and Pain Medicine, Paris, France, September 2023   | Ask the Expert: The green footprint of regional anaesthesia; Thoracic spinal – does it fit the ERAS program?; Lecture: Thoracic spinal – does it fit the ERAS program?; Ask the Expert: Research gaps in Postoperative Analgesia; Networking in RA: How do we define success in RA. <b>Andre van Zundert</b> |
| Singapore Anaesthesia Refresher Course, September 2023  | Obesity, metabolic syndrome, and inflammation – an update; Labour epidural in obese parturients; Obesity and coagulation in pregnancy; High flow nasal oxygen for Caesarean Section. Invited speaker. <b>Victoria Eley</b>   |
| Presentation at the Australian and New Zealand College of Anaesthetists Annual Scientific Meeting, Sydney 2023, the Michael Paech Prize Session | The use of slow-release opioids for acute pain management for elective and emergency Caesarean Sections: A retrospective audit of practice. <b>Amy Lin</b>   |
| Society of Obstetric Medicine Australia and New Zealand May 2023  | Obstetric Anaesthesia and Analgesia. <b>Victoria Eley</b>  |
| 6th International Conference of Perianaesthesia Nurses, Amsterdam, September 2023   | Perioperative Geriatric Medicine: Where Can We Help? <b>Andre van Zundert</b>  |
| Australian and New Zealand College of Anaesthetists Annual Scientific Meeting   | Obstetric anaesthesia incidents reported to WebAIRS: Summary of events and case presentations. <b>Victoria Eley</b>  |

|  |   |
|--|---|
| Sydney, May 2023 (Obstetric Anaesthesia Satellite Meeting)   |   |
| Herston Healthcare Symposium. Brisbane, September 2023. Co-Chair and Coordinator of multidisciplinary session  | Optimising the care of patients with obesity. <b>Victoria Eley</b>  |
| 20 <sup>th</sup> Indo-anaesthesia Conference, Jakarta, February 2023   | Prophylactic antibiotics for Caesarean section: pros and cons. <b>Victoria Eley</b>   |
| 20 <sup>th</sup> Indo-anaesthesia Conference, Jakarta, February 2023   | Airway management - Still not good enough! – How to make further improvements?; A systems approach to investigating/mitigating errors and adverse events; Different theoretical frameworks in safety science; Eliminating/mitigating hazards through human factors and qualitative methods for patient safety. <b>Andre van Zundert</b> |
| 6 <sup>th</sup> World Congress on Regional Anaesthesia and Pain Medicine, Paris, September 2023. Plenary Sessions  | Research gaps in postoperative analgesia; Thoracic spinal – does it fit the ESRA program? The green footprint of regional anaesthesia. <b>Andre van Zundert</b>   |
| Annual Scientific Congress, Malaysian Society of Anesthesiologists, Kuching, August 2023   | The green footprint of anaesthesiology; Providing safe and effective airway management; Providing safe and effective airway management. <b>Andre van Zundert</b>  |
| 23 <sup>rd</sup> Network for the Advancement of Patient Blood Management, Haemostasis and Thrombosis (NATA) Annual Symposium, Athens, Greece, April 2023 | What is the cost of missed intraoperative cell salvage opportunity? – COSTOMICS”; Avoiding intraoperative cell salvage in patients with infection of malignancy: A retrospective study of perioperative transfusion incidence. <b>Michelle Roets</b>  |
| GENCA National Meeting (Gastro-enterology) – Perth, WA, May 2023   | Perioperative Management of the Frail Elderly Surgical Patient. <b>Andre van Zundert</b>  |
| Annual Meeting of the Mexican Society of Anaesthesiology – Durango, January 2023   | Safety in Anaesthesia in Obstetric Patients. <b>Andre van Zundert</b>   |
| Australian and New Zealand College of Anaesthetists (ANZCA) Annual Scientific Meeting (ASM), Sydney, May 2023  | Clinical use of dexmetomidine in opioid free anaesthesia and the emergence of new multi-compartment dexmetomidine. <b>Anthony Eidan</b>   |

# Ear Nose and Throat (ENT)

## Research Highlights

In 2023, significant strides were made in ENT research, with several key outcomes and achievements marking notable progress in ENT Research. Dr. Ryan Sommerville received a prestigious grant from the Garnett Passe and Rodney Williams Memorial Foundation, spanning three years, to advance High-Resolution Imaging for Head and Neck and Skull Base conditions. Additionally, Dr. Sommerville's work was further recognized through the commencement of the *Skull Base Patient Experience Project*, funded by the RBWH foundation, alongside receiving the Extraordinary Opportunities Award. Another promising development was the initiation and recruitment phase of a sponsor-held pilot clinical trial investigating *The Effects of Intra-Sinus Application of Betamethasone Dipropionate Nasal Cream on patients with Chronic Rhinosinusitis post-Functional Endoscopic Sinus Surgery*. Concurrently, the continuation of a pilot study evaluating the effectiveness of Propranolol in treating Epistaxis in patients with Hereditary Haemorrhagic Telangiectasia highlights ongoing efforts in the department.

Furthermore, recruitment commenced for the *Nasal Microbiota Transfer Study*, aiming to explore novel treatment modalities. Dr. Sarju Vasani embarked on an innovative endeavour with the initiation and recruitment phase of a study focusing on *A Novel Assay for Early Detection of Minimal Residual Disease in Head and Neck Cancer patients*. Collaborating with the QIMR Berghofer Medical Research Institute, another project commenced, investigating *Tonsil Organoids for Malaria Immunology* within the realm of head and neck research. The partnership with the RBWH dietetics department *initiated Investigating the Impact of Skull Base Surgery on Nutrition and Swallowing Outcomes*, shedding light on comprehensive patient care. Lastly, a pivotal study focusing on Nasal Lavage to Detect Human Papillomavirus (HPV) in Inverted Papilloma was set up and approved, promising insights into viral-associated pathologies. These achievements collectively signify significant progress in ENT research, encouraging optimism for improved patient outcomes and novel therapeutic interventions in the future.

## Research Awards and Achievements

| Recipient<br>(RBWH staff in bold) | Award                                  | Event |
|-----------------------------------|--|-------|
| <b>Dr. Ryan Sommerville</b>       | 2023 Extraordinary Opportunities Award | NA    |

## Research Grants

| Investigator Names (RBWH staff in bold) | RBWH Departments / Research Groups | Research Project Title                                   | Granting Body   | Total Awarded (whole all years) | Length of Awards in years and years active |
|---|------------------------------------|--|---|---------------------------------|--|
| <b>Dr. Ryan Sommerville</b>             | ENT- Skull Base                    | Skull Base Patient Experience Project                    | RBWH Foundation                                       | \$39,175                        | 1 year, 2023                               |
| <b>Dr. Ryan Sommerville</b>             | ENT- Skull Base                    | High Resolution Imaging for Head and Neck and Skull Base | Garnett Passe and Rodney Williams Memorial Foundation | \$362,896                       | 3 years, 2023-2025                         |

## Current RBWH Department / Research Group Led Research Activity

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold)  | Research Project Title  | Number of RBWH Patients Recruited in 2023 |
|---|---|---|---|
| <b>James Earnshaw</b>                       | <b>Abigail Walker, James Bates, Richard Gan</b> | Pilot Study to Assess Effectiveness of Propranolol as Treatment of Epistaxis in Patients with Hereditary Haemorrhagic Telangiectasia                                    | 8   |
| <b>Abigail Walker</b>                       | <b>James Bates, Richard Gan</b>                 | The effect of intra-sinus application of Betamethasone Dipropionate nasal cream on patients with Chronic Rhinosinusitis post functional endoscopic sinus surgery (FESS) | 5   |

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold)   | Research Project Title   | Number of RBWH Patients Recruited in 2023 |
|---|--|--|---|
| <b>Sarju Vasani</b>                         | <b>Joshua Liaw, Omar Breik, Michael Wong, Akila Wijesekera, Nathanael Leavy</b>  | A Novel Assay for Early Detection of Minimal Residual Disease in Head and Neck Cancer Patients           | 50  |
| <b>Sarju Vasani</b>                         | <b>Abigail Walker, James Bates, Richard Gan, Dhinashin Chandran, Stephanie Yau, Joshua Lau</b>   | Tonsil Organoids for Malaria Immunology  | 49  |
| <b>Abigail Walker</b>                       | <b>Joshua Liaw, James Bates, Richard Gan</b>   | Sinonasal Microbiota Transplant  |   |
| <b>Craig Winter, Ryan Sommerville</b>       | <b>Hamish Alexander, Abigail Walker, Wallace Walker, Timothy Sullivan, Jennifer Gillespie, Stephanie Yau</b>   | The Use of Ultra High-resolution MRI for the assessment of Cranial Neuropathies in Base of Skull Tumours |   |
| <b>Ryan Sommerville</b>                     | <b>Charles Lin, Jennifer Gillespie, Paul Thomas, Brett Hughes, Gishan Ratnayake, Chris Oosthuizen, Catherine Barnett, Ashvini Abeysekara, Jason Papacostas, Touraj Taheric</b> | Utility of High-Resolution MRI in Evaluating Perineural Spread in Head and Neck Cancers                  |   |

## Collaborative Research Activity Involving RBWH Department / Research Group

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold) | Research Project Title  | Number of RBWH Patients Recruited in 2023 |
|---|--|---|---|
| <b>Ryan Sommerville</b>                     | <b>Teresa Brown</b>                            | Investigating the impact of skull base surgery on nutrition and swallowing outcomes | 0   |

## Keynote or Plenary Lectures given in 2023

| Date                               | Title                     |   |
|------------------------------------|---------------------------|---|
| 8th - 11th March, 2023             | <b>Dr. Abigail Walker</b> | Australasian Society of OHNS, Brisbane<br>Attendance at the conference programme<br>Faculty panel member for "Medical management of CRS" Chair of the "CSF leak management and prevention" session Presentation to OHNNS group on "Anterior skull base surgery" |
| 18th - 22 <sup>nd</sup> June, 2023 | <b>Dr. Abigail Walker</b> | European Rhinologic Society Congress, Sofia, Bulgaria<br>Attendance at the conference programme<br>Keynote speaker on the topic "Rhinitis in Athletes"  |
| 1st December, 2023                 | <b>Dr. Abigail Walker</b> | Royal Society of Medicine Laryngology and Rhinology section meeting<br>Attendance at educational meeting<br>Keynote speaker on the topic "Prevention and management of CSF leaks"   |

# General Surgery Unit 1: Breast and Endocrine

## Research highlights

The Breast and endocrine unit endeavours to improve patient outcomes for QLD patient with breast cancer and endocrine related disorders.

Breast scaffold clinical trial closed recruitment in 2023 assessing safety, feasibility, and long-term outcomes and satisfaction. Similarly, the recruitment target was reached for the Intra-operative radiotherapy (IORT) implementation project with follow up visits planned for 2024.

The unit's focus in improving patient care is reflected in the numerous surgical quality improvement projects undertaken throughout 2023.

## Current RBWH Department / Research Group Led Research Activity

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold)   | Research Project Title  | Number of RBWH Patients Recruited in 2023 |
|---|--|---|---|
| <b>Owen Ung</b>                             | Michael Wagels, <b>Clement Wong</b>  | Clinical trial evaluating medical-grade polycaprolactone-PCL breast scaffold implantation with autologous fat grafting for breast implant revision and congenital defect correction surgery | 19  |
| <b>Kowski Murugappan</b>                    | <b>Paul Thomas; Owen Ung; Sunil Lakhani;</b> Ben Green; <b>Clement Wong; Liz Kenny; Karin Steinke; Louise Campbell; Natalie Bradford;</b> Colleen Niland | Evaluating the accuracy of 18F-FDG PET-MRI scan in detecting regional lymph node disease in high-risk Breast cancer patients: PETAL Study   | 12  |
| <b>Diana Tam</b>                            | <b>Kristen Elstner, Robyn Cheuk, Owen Ung, Clement Wong, Liz Kenny, Michelle Grogan, Kowski Murugappan, Charles Lin, Sunil Lakhani</b>                   | Intraoperative radiotherapy (IORT) for early breast cancer- a pilot evaluation of implementation, feasibility, safety and financial analysis  | 20  |
| <b>Kowski Murugappan</b>                    | <b>Keely Lynch, Bartholomew McKay</b>  | Importance of Axillary Lymph Node Dissection: 13-year Retrospective Analysis of a Tertiary Breast Surgical Unit   | N/A                                       |
| <b>Clement Wong</b>                         | <b>Yun-Hsuan Lee</b>   | Intra and post-operative outcomes of different surgical approaches towards adrenalectomy  | NA  |
| <b>Kowski Murugappan</b>                    | <b>Ashkun Naderin</b>  | Audit of Magnetic Resonance Imaging in the Evaluation of Lobular Carcinoma  | NA  |
| <b>Diana Tam</b>                            | Andrew Beatty, <b>Owen Ung, Kowski Murugappan, Clem Wong, Gwenda Chapman</b>   | Volumetric analysis of breast cancer specimens in patients undergoing breast conserving surgery   | NA  |

## Current RBWH Department Quality Improvement Activity

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold) | Project Title  |
|---|--|--|
| <b>Andrew Nathanson</b>                     | <b>Pongkwan Pratihthanda</b>                   | Thyroidectomy at RBWH: reviewing the activity of General Surgery and ENT departments   |
| <b>Diana Tam</b>                            | <b>Robyn Cheuk, Elena Blyth</b>                | A retrospective analysis evaluating delay to post-operative Radiation Treatment in Breast Cancer Patients  |
| <b>Clement Wong</b>                         | <b>Grace Kwok, Madeleine Kelly</b>             | Riding the highs: Do we need to control blood pressure spikes in all adrenalectomy patients  |
| <b>Kowski Murugappan</b>                    | <b>Isobel Hymer</b>                            | Axillary procedures in Breast Cancer patients over the age of 70- does this change clinical management? A retrospective study of patients at a tertiary centre |



## Research Publications

### Authors

| Investigator                 | ORCID ID  |
|------------------------------|---|
| Owen Ung                     | <a href="https://orcid.org/0000-0002-5308-5605">https://orcid.org/0000-0002-5308-5605</a> |
| Clement Wong                 | <a href="https://orcid.org/0000-0002-2945-8459">https://orcid.org/0000-0002-2945-8459</a> |
| Kowsalya (Kowski) Murugappan | <a href="https://orcid.org/0000-0001-5639-9338">https://orcid.org/0000-0001-5639-9338</a> |

### Publications in 2023

#### Journal Articles (RBWH staff in bold)

Campbell I, Wetzig N, **Ung O**, Espinoza D, Farshid G, Collins J, Kollias J, GebSKI V, Mister R, Simes RJ, Stockler MR, Gill G. 10-Year axillary recurrence in the RACS SNAC1 randomised trial of sentinel lymph node-based management versus routine axillary lymph node dissection. *Breast*. 2023 Aug 70: 70-75

Beatty AS, **Tam D**. Fibroadenoma in a transgender woman. *J Surg Case Rep* 2023. Apr 20

**Madeleine Kelly, Marli Williams, Clement Wong, Grace Kwok**. A large hemangioma of the breast influencing the management of breast cancer. *J Case Rep Images Surg*. 2023; 9 (2): 12-15.

# General Surgery Unit 2: Hepatobiliary/Pancreatic Surgery

## Research highlights

The unit's success in securing research funding for projects in 2023 will place the team in a better position to make significant advances in early diagnosis and treatment of pancreatic cancer. The unit celebrates the appointment of a research nurse to support the unit's research activity and facilitate collaborative research projects.

## Research Grants

| Investigator Names (RBWH staff in bold) | RBWH Departments / Research Groups | Research Project Title  | Granting Body   | Total Awarded (whole all years) | Length of Awards in years and years active |
|---|------------------------------------|---|---|---------------------------------|--|
| <b>David Cavallucci</b>                 | General Surgery/HPB unit           | Lighting up the needle in the haystack: targeting malignant stroma to detect early pancreatic cancer on PET | PanKind Australian Pancreatic Cancer Foundation Limited | \$99,442                        | 2 years, 2022-2024                         |
| <b>David Cavallucci</b>                 | General Surgery/HPB & DMI          | SCANPatient: Synoptic reporting of CT scans assessing cancer of the pancreas                                | MRFF  | \$297,301                       | 5 years, 2022-2027                         |

## Current RBWH Department / Research Group Led Research Activity

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold)  | Research Project Title  | Number of RBWH Patients Recruited in 2023 |
|---|---|---|---|
| <b>William McGahan</b>                      | <b>Paul Thomas, David Cavallucci, Richard Bryant,</b> Euan Walpole, Kellee Slater, Thomas O'Rourke, <b>Nicholas O'Rourke,</b> Nicholas Butler | Applicability of Positron Emission Tomography using Gallium-68 labelled Fibroblast Activating Protein Inhibitor for the diagnosis, staging and treatment of pancreatic cancer | 0   |
| <b>Nicholas O'Rourke</b>                    | <b>David Brough, David Cavallucci, Richard Bryant,</b>  | The RBWH liver database – establishing and maintaining textbook outcomes in liver surgery.  | NA  |

## Collaborative Research Activity Involving RBWH Department / Research Group

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold)  | Research Project Title  | Number of RBWH Patients Recruited in 2023 |
|---|---|---|---|
| Charles Pilgrim                             | <b>David Cavallucci</b> John Zalcborg, Liane Ioannou, Jessica Kasza, Samantha Ellis                     | SCANPatient: Synoptic reporting of CT scans assessing cancer of the pancreas  | N/A                                       |
| Vicki Whitehall                             | <b>David Clark, Matthew Burge, David Cavallucci,</b> Kelly Olsen  | The Development of Personalised Medicine Strategies for Colorectal Cancer   | 13  |
| Derek Richard                               | Kenneth O'Byrne, Connor O'Leary, Warren Joubert, <b>David Cavallucci,</b> Didier Boucher, Rodney Cusack | Assessment of cancer screening in the Australian population using the nematode (worm) <i>Caenorhabditis elegans</i> | 0   |

## Research Publications

### Authors

| Investigator      | ORCID ID  |
|-------------------|---|
| David Cavallucci  | <a href="https://orcid.org/0000-0003-2112-6465">https://orcid.org/0000-0003-2112-6465</a> |
| Nicholas O'Rourke | <a href="https://orcid.org/0000-0003-0744-2816">https://orcid.org/0000-0003-0744-2816</a> |

## Publications in 2023

### Journal Articles (RBWH staff in bold)

**Bell-Allen N, McKay B, Kilburn D, Waters P, Cavallucci D.** Robotic enucleation & uncinectomy of complex lesions of the proximal pancreas. ANZ J Surg. 2023 Dec;93(12):2897-2903

**Hunt J, Cavallucci D, Boyne N,** Brown N, **O'Rourke N.** Correct identification of visceral artery aneurysms is critical. ANZ J Surg. 2023 May;93(5):1445-1446

**O'Rourke N,** McKeivitt J. Commentary for article "Conditional Cumulative Incidence of Postoperative Complications Stratified By Complexity Classification for Laparoscopic Liver Resection: Optimization of In-Hospital Observation". Surgery. 2023Feb;173(2):428

Mairim Russo Serafini, Alexandra Mowat, Susanah Mustafa, Siamak Saifzadeh, Tara Shabab, Onur Bas, **Nicholas O'Rourke,** Dietmar W Huttmacher, Flavia Medeiros Savi. 3D-Printed Medical-Grade Polycaprolactone (mPCL) Scaffold for the Surgical Treatment of Vaginal Prolapse and Abdominal Hernias. Bioengineering (Basel) 2023 Oct 24;10(11):1242.

**McNamara A,** Avery A, Campbell C, **O'Rourke N.** A young male with HCC in hepatic adenoma initially diagnosed as focal nodular hyperplasia. ANZ J Surg. 2023 Jan;93(1-2):379-380

Görgec B, Benedetti Cacciaguerra A, Pawlik TM, Aldrighetti LA, Alseidi AA, Cillo U, Kokudo N, Geller DA, Wakabayashi G, Asbun HJ, Besselink MG, Cherqui D, Cheung TT, Clavien PA, Conrad C, D'Hondt M, Dagher I, Dervenis C, Devar J, Dixon E, Edwin B, Efanov M, Ettore GM, Ferrero A, Fondevilla C, Fuks D, Giuliani F, Han HS, Honda G, Imventarza O, Kooby DA, Lodge P, Lopez-Ben S, Machado MA, Marques HP, **O'Rourke N,** Pekolj J, Pinna AD, Portolani N, Primrose J, Rotellar F, Ruzzenente A, Schadde E, Siriwardena AK, Smadi S, Soubrane O, Tanabe KK, Teh CSC, Torzilli G, Van Gulik TM, Vivarelli M, Wigmore SJ, Abu Hilal M. An International Expert Delphi Consensus on Defining Textbook Outcome in Liver Surgery (TOLS). Ann Surg. 2023 May 1;277(5):821-828.

## Keynote or Plenary Lectures given in 2023

| Date        | Title  |
|-------------|--|
| 11 Nov 2023 | Current state of robotic surgery Australia vs International - David Cavallucci, Epworth HealthCare Meeting |

# General Surgery Unit 3: Colorectal Surgery

## Research highlights

The highlights for 2023 include the randomised controlled trial of the Modified Kono S anastomosis gaining Governance approval and now is open and recruiting. This study was presented at the Spring Colorectal Meeting in November 2023 at the Gold Coast. A lot of interest and positive enquiry was received. The hope is to expand the participating institutions so as to reach the sample size of 65 patients in an acceptable timeframe. PhD candidate Andrew Zammit is nearing completion of his PhD.

## Current RBWH Department / Research Group Led Research Activity

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold)   | Research Project Title   | Number of RBWH Patients Recruited in 2023 |
|---|--|--|---|
| David Clark                                 | <b>Amy Cao, Madeline Kelly, Ruben Rajan</b>  | Triple assessment of the anastomosis (objective anastomotic checklist): Covering The surgeon of the anastomosis  |   |
| David Clark                                 | <b>Damien Petersen</b> , John Lumley, Tim Slack, Andrew Riddell, <b>Craig Hacking, Jacobus Ungerer</b> | Phase 2 study of efficacy: The validation of Gastrografin measurement in post surgical samples following low anterior resection where the rectal tube is flushed with Gastrografin |   |
| David Clark                                 | <b>Jayson Moloney</b>  | A multicentre randomised controlled trial of the modified Kono S anastomosis versus the stapled side to side anastomosis after ileocolic resection for Crohn's disease             | 8   |
| <b>Jayson Moloney</b>                       | <b>David Clark, Aleksandra Edmundston</b>  | Long term functional outcomes after taTME in Australia and NewZealand  |   |
| David Clark                                 | <b>Graham Radford-Smith</b> , Lisa Simms (QIMRB), Martha Zakrzewski (QIMRB)                            | Ileal pouch microbiome: defining a pre-operative microbiological signature that predisposes to anastomotic leak  |   |
| David Clark                                 | Victoria Lim   | Delayed diagnosis of rectal cancer in young patients   |   |
| David Clark                                 | Kay Tai Choi, <b>Michael Lonne</b> , John Harrington   | The incidence and risk factors for the development of metachronous colorectal cancer   |   |

## Current RBWH Department Quality Improvement Activity

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold)   | Research Project Title   |
|---|--|--|
| <b>Carina Chow</b>                          | <b>Amy Cao, Andrew Stevenson, Craig Harris, Jayson Moloney</b>                                     | Retrospective audit of surgeon learning curve in robotic colorectal surgery  |
| <b>Carina Chow</b>                          | <b>Amy Cao</b>   | Retrospective audit of robotic and laparoscopic colorectal surgery           |
| <b>Madeleine Kelly</b>                      | <b>Alexandra Fullerton, Amy Cao</b> , Rachel Colbran, Rebecca Kimble, <b>David Clark</b>           | Pregnancy and Stomas: A retrospective series                                 |
| <b>David Clark</b>                          | <b>Andrew Zammit, Andrew Riddell</b> , John Hooper, Ian Brown                                      | Population based study of malignant polyps                                   |
| <b>David Clark</b>                          | <b>Madeleine Kelly, Amy Cao, Michael Lonne</b> , Kay Tai Choy, Shoni Philpot, Atefeh Taherian Fard | Longitudinal study of patterns of colorectal cancer in Queensland, Australia |

## Collaborative Research Activity Involving RBWH Department / Research Group

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold)                                     | Research Project Title   | Number of RBWH Patients Recruited in 2023 |
|---|--|--|---|
| Vicki Whitehall                             | <b>David Clark</b> , Matthew Burge, Catherine Bond, Kelly Olsen                    | The Development of Personalised Medicine Strategies for Colorectal Cancer  | 14  |
| <b>Peter Gillies</b>                        | <b>David Clark, Jason Brown, Stuart Pegg</b>                                       | Conditional reprogramming of colorectal cancer cells   | 3   |
| Vicki Whitehall                             | <b>David Clark</b> , Kelly Olsen   | The Development of Personalised Treatment for Locally Advanced Rectal Cancer (LARC)  | 2   |
| cholas Lyon                                 | John Hooper, Andrew Riddell, Simon Puttick, <b>David Clark</b>                     | The search for new theranostic targets for colorectal cancer   |   |
| <b>Andrew Maurice</b>                       | <b>Jason Brown</b> , Mark Smithers, <b>David Clark</b> , Donald Cameron            | Multi-centre study: Laparoscopic appendectomy versus antibiotics for radiologically confirmed acute uncomplicated appendicitis |   |
| Alexander Heriot                            | <b>David Clark</b> , Chris Gillespie, Mikhail Mikhail, Raphael Vergese, Mark Doule | Bi-National Colorectal Cancer Audit (BCCA)   |   |

## Research Publications

### Authors

| Investigator     | ORCID ID  |
|------------------|---|
| Andrew Stevenson | <a href="https://orcid.org/0000-0001-5639-3526">https://orcid.org/0000-0001-5639-3526</a> |
| David Clark      | <a href="https://orcid.org/0000-0002-2065-3012">https://orcid.org/0000-0002-2065-3012</a> |
| Andrea Warwick   | <a href="https://orcid.org/0000-0003-3937-5638">https://orcid.org/0000-0003-3937-5638</a> |

### Publications in 2023

#### Journal Articles (RBWH staff in bold)

Panizza J, **Edmundson A**, Swee, **Clark D** (2023) Renal Dysfunction Occurs Following Ileostomy Formation and is Independent of Readmission. <https://doi.org/10.1111/ans.18254>

Lyons, Giri, R., Begun, J., **Clark, D. A.**, Proud, D., He, Y., Hooper, J., & Kryza, T. (2023). Reactive oxygen species as mediators of disease progression and therapeutic response in colorectal cancer. *Antioxidants & Redox Signaling*. <https://doi.org/10.1089/ars.2022.0127>

Johnston B, **Clark, D. A.**, & **Warwick, A. M.** (2023). Long-term outcomes of total colectomy for severe constipation. *Colorectal Disease*. <https://doi.org/10.1111/codi.16517>

**Zammit, AP.**, Brown, I, Hooper, JD, **Clark, DA**, and Riddell, AD. (2023). Estimation of risk posed by malignant polyps amongst colorectal surgeons in Australia and New Zealand. *Annals of Coloproctology* accepted

Raichurkar, P., Denehy, L., Solomon, M. et al. Research Priorities in Prehabilitation for Patients Undergoing Cancer Surgery: An International Delphi Study. *Ann Surg Oncol* (2023). <https://doi.org/10.1245/s10434-023-14192-x>

**Keogh C, Clark D**, Moore J, Cossio D, Smith N. (2023) Obstructing colorectal cancer. A population-based review of colonic stenting in Queensland, Australia. Accepted ACP

Brown, I., **Zammit, AP**, Bettington, M, Cooper, C, Gill, AJ, Agoston, A. and Odze, R. (2023), Pathological features associated with metastasis in patients with early invasive (pT1) colorectal carcinoma in colorectal polyps. *Histopathology*, 83: 591-606

**Zammit, AP**, Hooper, JD, Brown, IB, **Clark, DA**, Riddell, AD (2023) In comparison with polypectomy, colorectal resection is associated with improved survival for patients diagnosed with malignant polyps. *Colorectal Dis* 25(2) 261-271

**Zammit, AP**, Brown, I, Hooper, JD, **Clark, DA** and Riddell, AD (2023), Malignant polyps in the COVID-19 era: a population-based analysis. *ANZ Journal of Surgery*, 93: 932-938

## Journal Articles (RBWH staff in bold)

**Zammit, AP**, Srinath, H, Warner, R, Mor, I and **Clark, DA** (2023), Recurrent pouch volvulus treated with robotic ventral graft pouch-pecty. ANZ Journal of Surgery, 93: 1386-1387

**Lonne MLR**, Sakata S, Papas CP, Stevenson ARL(2023) How to do a Delorme's sleeve mucosectomy and muscular plication for full-thickness rectal prolapse. ARL.ANZ J Surg. 93(6):1694-1696. doi: 10.1111/ans.18448. Epub 2023 Apr 6.PMID: 37025032.

## Keynote or Plenary Lectures given in 2023

| Date          | Title   |
|---------------|---|
| May 2023      | <b>David Clark</b> , Gastroenterology Symposium Marriott, Gold Coast "Approach to stomas"   |
| 18/11/2023    | <b>David Clark</b> , CSSANZ Spring Meeting Gold Coast, "Kono S Anastomosis"   |
| 03/05/2023    | <b>Andrew Zammit</b> , RACS Annual Scientific Congress 2023, ". Development of an online risk predictor for Malignant Colorectal Polyps |
| 18/11/2023    | <b>Andrew Zammit</b> , CSSANZ Spring Meeting Gold Coast, "Development of an online risk predictor for Malignant Colorectal Polyps"      |
| 18/11/2023    | <b>Jayson Molony</b> , CSSANZ Spring Meeting Gold Coast, "Functional outcomes after TaTME"  |
| 24-26/07/2023 | <b>Andrew Stevenson</b> , Society for Robotic Surgery Annual Meeting, "Robotic Surgery for Anterior/Posterior Pexy for Rectal Prolapse" |
| 01/06/2023    | <b>Andrew Stevenson</b> , University of California, " <b>MD Visiting Professor Memorial Lectureship</b> "                               |

# General Surgery Unit 4: Upper Gastrointestinal Surgery

## Research highlights

The Upper Gastro-intestinal surgical unit is one of the largest bariatric public services in the country. The unit has established a comprehensive database for bariatric surgery representing RBWH and surrounding private sites. This database and others which include oesophageal cancers provides capacity for future research, safety reporting and quality improvement.

### Current RBWH Department / Research Group Led Research Activity

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold) | Research Project Title   | Number of RBWH Patients Recruited in 2023 |
|---|--|--|---|
| David Mitchell                              | Dr George Hopkins, Dr Robert Finch             | Outcomes in RYGB with varying limb lengths   | NA  |
| George Hopkins                              | Georgia Taylor, Leila Sheike                   | Weight outcomes in primary bariatric patients complicated by severe intra-abdominal sepsis | N/A                                       |

### Current RBWH Department Quality Improvement Activity

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold)   | Project Title  | Number of RBWH Patients Recruited in 2023 |
|---|--|--|---|
| David Mitchell                              | Guat Shi Ng  | Bariatric Surgery in a Public Hospital: a 5-year Statewide Experience in Queensland, Australia.  |   |
| Kevin Chan                                  | Guat Shi Ng  | C-Reactive protein as a predictor of early postoperative complications in public bariatric surgery patients  |   |
| David Mitchell                              | Meryem Al-Abid   | Safety and Efficacy of bariatric surgery in patients with BMI >50 at RBWH  |   |
| Daniel Chan                                 | David Mitchell   | Public Bariatric Surgery in Aboriginal and Torres Strait Islander Patients   |   |
| Isobel Hyman                                | Melanie Lauti, Siobhan Wallin, George Hopkins, David Mitchell, Benjamin Dodd, Patrick Walsh, Helen MacLaughlin | Gastrojejunal anastomosis resizing with Argon Plasma Coagulation (APC) and Overstitch procedures to manage weight regain after weight loss surgery |   |

### Collaborative Research Activity Involving RBWH Department / Research Group

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold)  | Research Project Title   | Number of RBWH Patients Recruited in 2023 |
|---|---|--|---|
| International Collaborative                 | David Mitchell, Harish Iswariah, Madeline Kelly, Bethany Matthews, Klaudia Clark, Su Su Hlaing, Phoebe Wood, David Brough | GECKO (Global Evaluation of Cholecystectomy Knowledge and Outcomes) study                | NA  |
| International Collaborative                 | David Mitchell, Harish Iswariah, Madeline Kelly, Su Su Hlaing   | Global Cohort Study: Hernias, Pathway and Planetary Outcomes for Inguinal Hernia Surgery |   |

## Research Publications

### Publications in 2023

#### Journal Articles (RBWH staff in bold)

**Carrie-Anne Lewis, Emma J Osland, Susan de Jersey, George Hopkins, Matthew Seymour**, Lindsey Webb, Mark D Chatfield, Ingrid J Hickman. Monitoring for micronutrient deficiency after bariatric surgery-what is the risk? *Eur J Clin Nutr.* 2023 Nov;77(11):1071-108

O'Moore-Sullivan T, Paxton J, Cross M, Teppala S, **Chikani V, Hopkins G**, Wykes K, Scuffham PA; Clinical and Operational Reference Group. Health outcomes of patients with type 2 diabetes following bariatric surgery: Results from a publicly funded initiative. *PLoS One.* 2023 Feb 24;18(2):e0279923

Marjan M Naeini, Felicity Newell, Lauren G Aoude, Vanessa F Bonazzi, Kalpana Patel, Guy Lampe, Lambros T Koufariotis, Vanessa Lakis, Venkateswar Addala, Olga Kondrashova, Rebecca L Johnston, Sowmya Sharma, Sandra Brosda, Oliver Holmes, Conrad Leonard, Scott Wood, Qinying Xu, Janine Thomas, Euan Walpole, G Tao Mai, Stephen P Ackland, Jarad Martin, **Matthew Burge, Robert Finch**, Christos S Karapetis, Jenny Shannon, Louise Nott, Robert Bohmer, Kate Wilson, Elizabeth Barnes, John R Zalcborg, B Mark Smithers, John Simes, Timothy Price, Val Gebiski, Katia Nones, David I Watson, John V Pearson, Andrew P Barbour, Nicola Waddell Multi-omic features of oesophageal adenocarcinoma in patients treated with preoperative neoadjuvant therapy. 2023 May 31;14(1):3155

**Victoria Eley, Rebecca Christensen, Louis Guy**, Kerstin Wyssusek, Anita Pelecanos, **Benjamin Dodd**, Michael Stowasser, **Andre van Zundert** Correction: ClearSight™ finger cuff versus invasive arterial pressure measurement in patients with body mass index above 45 kg/m<sup>2</sup>. *BMC Anesthesiol.* 2023 Mar 10;23(1):75.



# General Surgery Unit 5: Acute Surgical Unit

## Research highlights

The Acute Surgical Unit (ASU) is a consultant led multidisciplinary surgical service optimised to provide pre and post operative care for patients presenting to the emergency department at RBWH. The unit aims to review the service and patient experience of same day discharge following uncomplicated appendicitis.

ASU will support a Quality Improvement audit, investigating outcomes following emergency laparotomy (ANZELA-QI). This audit is initiated by the Royal Australasian College of Surgeons (RACS).

## Current RBWH Department / Research Group Led Research Activity

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold)        | Research Project Title  |
|---|---|---|
| <b>Carl Lisec</b>                           | Meryem Al-Abid, <b>Matthew Bassa</b> , Daniel Kilburn | Same Day Discharge Post Laparoscopic Appendectomy in an Acute Surgical Unit |

## Collaborative Research Activity Involving RBWH Department / Research Group

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold) | Research Project Title   |
|---|--|--|
| <b>Carl Lisec</b>                           | <b>Michael Rudd</b>                            | Australia and New Zealand Emergency Laparotomy Audit - Quality Improvement (ANZELA-QI) |

## Research Publications

### Authors

| Investigator | ORCID ID  |
|--------------|---|
| Jason Brown  | <a href="https://orcid.org/0000-0002-8386-1118">https://orcid.org/0000-0002-8386-1118</a> |

# Oral & Maxillofacial Surgery Unit

## Research highlights

The RBWH Oral and Maxillofacial unit had a successful research year in 2023. Multiple ongoing national and international collaborations including with COVID Surgery collaborative, QUT, QIMR and UQ developed and furthered joint research projects. The department was successful in grant application, research publications and the graduation of higher degree candidates. Industry partnerships allowed for research education days, and for the joint development of research projects and biomedical devices. The department is well positioned with staff and resources to continue this momentum into 2024.

## Successful PhD candidates in 2023

| Name              | PhD Title  | Month Competed | Affiliated University    | Summary  |
|-------------------|--|----------------|--------------------------|--|
| Dr Joshua Russell | Donor site morbidity in composite free flaps in the head and neck. | November 2023  | University of Queensland | In reconstructive head and neck surgery there are several bony free flaps which a surgeon and patient can choose between. There is limited data on the donor site morbidity of these bone harvests, and their impact on quality of life. This Thesis synthesised a 3-year prospective study with objective and subjective data comparing different composite free flaps. It provides useful information for both clinicians and patients when faced with decisions about which flap to choose. |

## Research Grants

| Investigator Names (RBWH staff in bold)                                 | RBWH Departments / Research Groups | Research Project Title   | Granting Body                     | Total Awarded (whole all years) | Length of Awards in years and years active |
|---|------------------------------------|--|-----------------------------------|---------------------------------|--|
| <b>Martin Batstone</b>  | OMFS/QIMR                          | Leveraging CD226 as a novel prognostic biomarker for early-stage oral squamous cell carcinoma (OSCC) and identification of new immunotherapy treatment strategies. | Collaborative Research grant RBWH | \$140,000                       | 2 years, 2023-2024                         |
| <b>Martin Batstone</b>  | OMFS/UQ                            | Understanding resorption patterns in vertically augmented bone   | ITI research Grant                | \$75,000                        | 2 years, 2023-2024                         |
| <b>Nicholas Puls, Danilo Carluccio, Angelo Mathews, Martin Batstone</b> | OMFS                               | Evaluation of 3D printed artificial eyes for orbital prostheses  | RBWH Foundation Grant             | \$50,000                        | 3 years, 2022-2024                         |

## Collaborative Research Activity Involving RBWH Department / Research Group

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold) | Research Project Title   | Number of RBWH Patients Recruited in 2023 |
|---|--|--|---|
| <b>Martin Batstone</b>                      |  | Leveraging CD226 as a novel prognostic biomarker for early-stage oral squamous cell carcinoma (OSCC) and identification of new immunotherapy treatment strategies. | ~10                                       |

## Research Publications

### Authors

| Investigator     | ORCID ID  | Investigator  | ORCID ID  |
|------------------|---|---------------|---|
| Thomas Young     | <a href="https://orcid.org/0000-0002-2103-6585">https://orcid.org/0000-0002-2103-6585</a> | Howard Cho    | <a href="https://orcid.org/0000-0001-8603-3425">https://orcid.org/0000-0001-8603-3425</a> |
| Martin Batstone  | <a href="https://orcid.org/0000-0002-9058-9976">https://orcid.org/0000-0002-9058-9976</a> | Omar Breik    | <a href="https://orcid.org/0000-0001-7996-9268">https://orcid.org/0000-0001-7996-9268</a> |
| Danilo Carluccio | <a href="https://orcid.org/0000-0001-5041-5712">https://orcid.org/0000-0001-5041-5712</a> | Joel Tuckett  | <a href="https://orcid.org/0000-0002-9894-8830">https://orcid.org/0000-0002-9894-8830</a> |
| Scott Borgna     | <a href="https://orcid.org/0000-0002-6959-8085">https://orcid.org/0000-0002-6959-8085</a> | Nicole Milham | <a href="https://orcid.org/0000-0002-8128-4556">https://orcid.org/0000-0002-8128-4556</a> |
| Edward Hsu       | <a href="https://orcid.org/0000-0003-3562-0982">https://orcid.org/0000-0003-3562-0982</a> | Beau Knight   | <a href="https://orcid.org/0000-0003-2622-1170">https://orcid.org/0000-0003-2622-1170</a> |
| Thomas Young     | <a href="https://orcid.org/0000-0002-2103-6585">https://orcid.org/0000-0002-2103-6585</a> |               |   |

### Publications in 2023

#### Journal Articles (RBWH staff in bold)

**Young TK, Tuckett J, Johnson NR, Breik O.** Rigid versus non-rigid fixation for bilateral mandibular angle fractures: a retrospective multicentre review. *Plastic and reconstructive surgery*. 2023 Sep 29:10-97

Russell J, **Breik O, Borgna SC**, Volker G, Pateman K, **Batstone M.** Implications of the composite free flap harvest site on quality of life after head and neck surgery: a prospective series. *Int J Oral Maxillofac Surg*. 2023 Oct 17:S0901-5027(23)00259-X. doi: 10.1016/j.ijom.2023.09.013. Epub ahead of print. PMID: 37858382

Banavar G, Ogundijo O, Julian C, Toma R, Camacho F, Torres PJ, Hu L, Chandra T, Piscitello A, **Kenny L, Vasani S, Batstone M**, Dimitrova N, Vuyisich M, Amar S, Punyadeera C. Detecting salivary host and microbiome RNA signature for aiding diagnosis of oral and throat cancer. *Oral Oncol*. 2023 Oct;145:106480. doi: 10.1016/j.oraloncology.2023.106480. Epub 2023 Jul 14. PMID: 37454545

Vaquette C, **Carluccio D, Batstone M**, Ivanovski S. Workflow for Fabricating 3D-Printed Resorbable Personalized Porous Scaffolds for Orofacial Bone Regeneration. *Methods Mol Biol*. 2023;2588:485-492. doi: 10.1007/978-1-0716-2780-8\_29. PMID: 36418706

**Goh EZ**, Beech N, Johnson NR, **Batstone M.** The dental management of patients irradiated for head and neck cancer. *Br Dent J*. 2023 Jun;234(11):800-804. doi: 10.1038/s41415-023-5864-z. Epub 2023 Jun 9. PMID: 37291302; PMCID: PMC10250190

Russell J, Volker G, McGarvey D, Sharpe C, Breik O, **Borgna SC**, Pateman K, **Batstone M.** An objective analysis of composite free flap donor site morbidity in head and neck surgery: Prospective series. *Head Neck*. 2023 Feb;45(2):398-408. doi: 10.1002/hed.27254. Epub 2022 Nov 27. PMID: 36437486; PMCID: PMC10098479

Liu TPJ, David M, Clark JR, Low TH, **Batstone MD.** Prediction nomogram development and validation for postoperative radiotherapy in the management of oral squamous cell carcinoma. *Head Neck*. 2023 Jun;45(6):1503-1510. doi: 10.1002/hed.27363. Epub 2023 Apr 5. PMID: 37019874

National Institute for Health and Care Research Global Health Research Unit on Global Surgery. Reducing the environmental impact of surgery on a global scale: systematic review and co-prioritization with healthcare workers in 132 countries. *Br J Surg*. 2023 Jun 12;110(7):804-817. doi: 10.1093/bjs/znad092. Erratum in: *Br J Surg*. 2023 Nov 9;110(12):1907. PMID: 37079880; PMCID: PMC10364528

Badar F, Vandi L-J, **Carluccio D**, Redmond M, Novak JI. Preliminary colour characterisation of a Stratasys J750 digital anatomy printer with different fillings and face orientations. *Progress in Additive Manufacturing*. 2023

**Murray-Douglass A, Peters MC**, Johnson N, **Harris R.** 2023. The impact of orbital volume on post-traumatic enophthalmos: a systematic review and meta-analysis. *Journal of Craniofacial Surgery*, 34(5):1420-1426. DOI: 10.1097/SCS

**Nicole Milham**, Beat Schmutz, **Thomas Cooper**, **Edward Hsu**, Dietmar W. Hutmacher, Anthony Lynham. Are Magnetic Resonance Imaging-Generated 3Dimensional Models Comparable to Computed Tomography-Generated 3Dimensional Models for Orbital Fracture Reconstruction? An In-Vitro Volumetric Analysis. *Journal of Oral and Maxillofacial Surgery*, 2023-09-01, Vol 81, Iss 9, Pg 1116-1123 DOI: [10.1016/j.joms.2023.05.015](https://doi.org/10.1016/j.joms.2023.05.015).

### Keynote or Plenary Lectures given in 2023

| Date           | Title   |
|----------------|---|
| August 2023    | Head and Neck Cancer in the Elderly. To treat or not to treat. M Batstone |
| August 2023    | Combining the Old and the New – A Hybrid Approach D Carluccio             |
| September 2023 | Point of Care Manufacturing D Carluccio                                   |

# Orthopaedic Surgery

## Research highlights

The Department of Orthopaedic Surgery at the Royal Brisbane and Women's Hospital continues to be very actively engaged in clinically relevant research, and remains one of the 5 most academically productive orthopaedic units in Australia. As a result of our collective efforts the Department achieved a total of more than 30 publications, the most ever for us in a single year. Our Department takes great pride in providing an environment of intellectual curiosity and academic rigour for our junior doctors, encouraging participation in research of the highest calibre. One of the major highlights for 2023 was the successful completion of his PhD thesis by Dr Andrew Foster, titled "Improving the Management of Fracture-Related Infection through Local Antibiotic Therapy". Dr Foster was also the recipient of the Don Tuffley Prize for AOA Queensland Registrar Best Research Paper, the third time he has won this award. He leads a very strong contingent of registrars at the Royal with publications in 2023, and a total of 9 of our registrars contributed. In addition to Andrew, Nick Croker, Helena Franco, Luke Visscher, Will Steadman, Miran Stubican, Emma Carlisle, Jordy White, and Ash Wadhawan also had peer-reviewed publications in 2023.

Another major highlight was the appointment of Dr Seung-Min Youn as the Director of Research for the Department. Seung already has a strong record of academic achievement through clinical research and has been tasked with coordinating our efforts and mentoring registrars who express an interest in various projects. Through Prof Michael Schuetz, the Department continues to maintain very close ties with the Jamieson Trauma Institute (JTI) and therefore access to additional very high-quality resources to support our research. Furthermore, A/Prof Kevin Tetsworth serves as the link for our Department to the impressive capabilities of the Herston Biofabrication Institute, with a substantial number of ongoing research projects related to 3D printing and modelling. Our unit is also a very active leader within the orthopaedic infection community, and the Multi-Disciplinary Device Related Infection Team (mDRIFT) has been an important addition to our clinical activity with a number of related research initiatives underway. Together with QUT, in 2023 mDRIFT was able to successfully recruit the services of Prof Andrej Trampuz; he comes to us from the Charité Hospital in Berlin, where he led one of the most clinically and academically active units in the world dedicated to musculoskeletal infection. He will join us in the coming year, and will significantly enhance our research capabilities while focussing on this extremely important clinical condition.

## Successful PhD candidates in 2023

| Name                   | PhD Title   | Month Competed | Affiliated University  | Summary  |
|------------------------|---|----------------|--|--|
| <b>Andrew L Foster</b> | Improving the Management of Fracture-Related Infection through Local Antibiotic Therapy | August 2023    | University of Technology, Faculty of Health, School of Clinical Sciences Queensland University of Technology | Original research within this thesis includes the first population-based epidemiological and health economic analysis of FRI performed worldwide. These findings demonstrate enormous upside potential to improving current prevention and treatment methods. One potential method of doing so is through improving the delivery of local antibiotic therapy. A novel antibiotic-loaded hydrogel is investigated within a series of large animal models, which demonstrated superiority in prevention and treatment of FRI over currently available clinical treatments. |

## Research Awards and Achievements

| Recipient (RBWH staff in bold) | Award   | Event   |
|--------------------------------|---|---|
| <b>Andrew L Foster</b>         | Don Tuffley Prize for the Australian Orthopaedic Association (AOA) Queensland Registrar Best Research Paper, 2023 | Queensland Branch Meeting of the AOA August 2023, Noosa, Queensland |

## Research Publications

### Authors

| Investigator     | ORCID ID            | Investigator   | ORCID ID            |
|------------------|---------------------|----------------|---------------------|
| Andrew Mayo      | 0000-0002-7995-6237 | Seung-Min Youn | 0000-0002-3474-2040 |
| Kevin Tetsworth  | 0000-0002-3069-4141 | Andrew Foster  | 0000-0003-1191-3916 |
| Jerry van de Pol | 0009-0000-6109-2381 |                |                     |

### Publications in 2023

#### Journal Articles (RBWH staff in bold)

**Foster AL**, Boot W, Stenger V, D'Este M, Jaiprakash A, Crawford R, **Schuetz MA**, Eglin D, Zeiter S, Richards RG, Moriarty TF. Antibiotic hydrogel for single-stage revision in orthopaedic infection: a preclinical study. *Orthop Procs.* 2023;105-B (SUPP 2):18-18. doi:10.1302/1358-992X.2023.2.018

Doherty C, McKee CM, **Foster AL**. Results of Exogen therapy for the treatment of fracture nonunion or delayed healing. *Orthop Procs.* 2023;105-B (SUPP 10): 11-11. doi:10.1302/1358-992X.2023.10.011

**Franco H**, Williamson F, Manzanero S, **Schuetz M**. Clavicle fixation to reduce short-term analgesia and improve respiratory function in patients with chest wall injuries. *Archives of Orthopaedic and Trauma Surgery.* 2023 Nov;143(11):6561-7

**Croker N**, Panwar Y, Balogh ZJ. Orthopaedic surgery academic productivity – how do we measure up? *Journal of Orthopaedic Surgery.* 2023 Sep 12;31(3):10225536221135471

Wang Y, Wang L, Soro N, Buenzli PR, Li Z, **Green N**, **Tetsworth K**, **Erbulut D**. Bone ingrowth simulation within the hexanoid, a novel scaffold design. *3D Printing and Additive Manufacturing.* 2023 Nov 10

**Steadman W**, **Chapman PR**, **Schuetz M**, **Schmutz B**, Trampuz A, **Tetsworth K**. Local antibiotic delivery options in prosthetic joint infection. *Antibiotics.* 2023 Apr 14; 12(4): 752

**Tetsworth K**, **Green N**, Barlow G, **Stubican M**, Vindenes F, Glatt V. Macroscopic osteochondral injuries of the talar dome associated with pilon fractures. In *Bone & Joint Journal, Orthopaedic Proceedings* 2023 Feb 1 (Vol. 105, No. SUPP 2, pp. 82-82). British Editorial Society of Bone & Joint Surgery

**Green N**, Barlow G, **Erbulut D**, **Stubican M**, Vindenes F, Glatt V, **Tetsworth K**. Surface area of talar dome injuries associated with tibial pilon fractures. In *Bone & Joint Journal, Orthopaedic Proceedings* 2023 Feb 1 (Vol. 105, No. SUPP 3, pp. 32-32). British Editorial Society of Bone & Joint Surgery

**Visscher LE**, McCarthy C, White J, **Tetsworth K**. Asymmetric post-traumatic knee arthritis is closely correlated with both severity and time for lower limb coronal plane malalignment. *Cartilage.* 2023 Oct 17:19476035231186688-

Min H, Rabi Y, **Wadhawan A**, Bourgeat P, Dowling J, **White J**, Tchernegovski A, Formanek B, **Schuetz M**, Mitchell G, Williamson F, **Hacking C**, **Tetsworth K**, **Schmutz B**. Automatic classification of distal radius fracture using a two-stage ensemble deep learning framework. *Physical and Engineering Sciences in Medicine.* 2023

**White J**, **Wadhawan A**, Min H, Rabi Y, **Schmutz B**, Dowling J, Tchernegovski A, Bourgeat P, **Tetsworth K**, Fripp J, Mitchell G. Distal radius fracture classification using deep learning algorithms. In *Bone & Joint Journal, Orthopaedic Proceedings* 2023 Feb 10 (Vol. 105, No. SUPP 2, pp. 102-102)

Rhee SM, **Youn SM**, Lee JU, Kim CH, Kim SY, Ham HJ, Rhee YG. Posterior compression test: a provocative test for detecting posterior labral tears. *Indian J Orthop.* 2023 Nov 26; 58(1): 48-55. doi: 10.1007/s43465-023-01028-9. PMID: 38161393; PMCID: PMC10754776

Rhee SM, **Youn SM**, Kim CH, Chang GW, Kim SY, Ham HJ, Rhee YG. Rotator cuff repairs with all-suture tape anchors: no difference in outcomes between with or without all-suture tape anchors. *Knee Surg Sports Traumatol Arthrosc.* 2023 Sep; 31(9): 4060-4067. doi: 10.1007/s00167-023-07454-4. Epub 2023 May 24. PMID: 37226010

Sparks DS, Savi FM, Dlaska CE, Saifzadeh S, Briery G, Ren E, Cipitria A, Reichert JC, Wille ML, **Schuetz MA**, Ward N, Wagels M, Hutmacher DW. Convergence of scaffold-guided bone regeneration principles and microvascular tissue transfer surgery. *Science Advances.* 2023 May 5; 9(18): eadd6071

Xu Y, Huang TB, **Schuetz MA**, Choong PF. Mortality, patient-reported outcome measures, and the health economic burden of prosthetic joint infection. *EFORT Open Reviews.* 2023 Sep 1; 8(9): 690-7

Hohmann E, **Tetsworth K**. Arthroscopic treatment and subacromial decompression of calcific tendinitis without removal of the calcific deposit results in rapid resolution of symptoms and excellent clinical outcomes in commercial airline pilots and cabin crew. *Archives of Orthopaedic and Trauma Surgery.* 2023 Feb;143(2): 919-26

Hohmann E, Keough N, Glatt V, **Tetsworth K**. Surgical treatment is not superior to nonoperative treatment for displaced proximal humerus fractures: A systematic review and meta-analysis. *Journal of Shoulder and Elbow Surgery.* 2023 Jan 31: S1058-2746

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Haidary A, Hoellwarth JS, **Tetsworth K**, Oomatia A, Al Muderis M. Transcutaneous osseointegration for amputees with burn trauma. *Burns: Journal of the International Society for Burn Injuries*. 2023 Aug; 49(5):1052-61

Hohmann E, **Tetsworth K**. Clinical outcomes for grades III-V acromioclavicular dislocations favor double-button fixation compared to clavicle hook plate fixation: a systematic review and meta-analysis. *European Journal of Orthopaedic Surgery & Traumatology: Orthopedie Traumatologie*. 2023 Feb 25

Hohmann E, **Tetsworth K**, Glatt V. Anterior cruciate ligament reconstruction results in better patient reported outcomes but has no advantage for activities of daily living or the subsequent development of osteoarthritis. A systematic review and meta-analysis. *The Knee*. 2023 Mar 1; 41:137-49

Hoellwarth JS, **Tetsworth K**, Akhtar MA, Al Muderis M. Transcutaneous osseointegration for amputees: What is it, how did it evolve, and what may develop? *Current Physical Medicine and Rehabilitation Reports* 2023. 11: 6–15 <https://doi.org/10.1007/s40141-023-00376-9>

Hohmann E, **Tetsworth K**, Glatt V. Corticosteroid injections for the treatment of lateral epicondylitis are superior to platelet rich plasma at 1 month but platelet rich plasma is more effective at 6 months: An updated systematic review and meta-analysis of level 1 and 2 studies. *Journal of Shoulder and Elbow Surgery*. 2023 May 27: S1058-2746

Hoellwarth JS, Oomatia A, **Tetsworth K**, Vrazas E, Al Muderis M. Bone density changes after five or more years of unilateral lower extremity osseointegration: Observational cohort study. *Bone Reports*. 2023 Apr 28; 18:101682-

Kandemir U, Naclerio EH, McKee MD, Weatherby DJ, Cole PA, **Tetsworth K**. Humerus fractures: selecting fixation for a successful outcome. *OTA International*. 2023 Jun 1; 6(3S): e259

Glatt V, **Tetsworth K**. Biomimetic haematoma as a novel delivery vehicle for rhBMP-2 to potentiate the healing of nonunions and bone defects. *Journal of orthopaedic trauma*. 2023 Nov 1;37(11): S33-9

Glatt V, Bartnikowski N, Bartnikowski M, Aguilar L, **Schuetz M**, **Tetsworth K**. Intramedullary implant stability affects patterns of fracture healing in mice with morphologically different bone phenotypes. *Bone*. 2023. 179: 116978-116978.

Akhtar MA, Low C, Tiemessen C, Hoellwarth JS, Al Muderis M, **Tetsworth K**. Current challenges and future prospects of osseointegration limb reconstruction for amputees. *SN Comprehensive Clinical Medicine*. 2023 Dec 29; 6:4

Chavan A, Hoellwarth J, **Tetsworth K**, Lu W, Oomatia A, Alam S, Vrazas E, Al Muderis M. Transcutaneous osseointegration reconstruction for wheelchair-bound transfemoral amputees (K0 level). In *Bone & Joint Journal, Orthopaedic Proceedings* 2023;105-B (SUPP 2):26-26. doi:10.1302/1358-992X.2023.2.026

Akhtar MA, Low C, Blacklock C, Tiemessen C, Hoellwarth JS, Al Muderis M, **Tetsworth K**. Current Challenges and Future Prospects of Osseointegration Limb Reconstruction for Amputees. *British Journal of Surgery*. 2023 Sep; 110 (Supplement 7): znad258-679

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## Book Chapters (RBWH staff in bold)

Paxton N, **Tetsworth K**, Woodruff M. Personalization for surgical implants. *Digital Human Modeling and Medicine: The Digital Twin*. 2023:849-74.

# Urology

## Research highlights

In 2023, the Urology Department continued to grow with a focus on department led and collaborative research projects. We welcomed Drs Harry Collin and Kandice Keogh into the part-time PHO with research interest positions, which continues to offer valuable research experience and opportunity to answer important clinical questions. We were also glad to support many projects by resident medical officers (RMOs), resulting in conference presentations and publications in preparation.

The department continued to contribute to the broader urology profession with 30 conference presentations and 28 peer reviewed publications. Urology supported 13 department led research projects and contributed to 2 national trials.

Research topics this year included the use of artificial intelligence in urology and its utility for clinicians and patient education, use of imaging for the diagnosis of prostate cancer and the role of 3D anatomical models in tumour identification. Additionally, a collaborative project was completed alongside RBWH First Nations outpatient department nurse navigators which assessed the challenges experienced by Aboriginal and Torres Strait Islander patients in accessing outpatient urology care.

We continue to expand our focus with collaborative projects alongside the Herston Bio-fabrication Institute, University of Queensland, Herston Imaging and Research Facility, Infectious Diseases, Nuclear Medicine, Radiation and Medical Oncology.

A/Prof Matthew Roberts was listed in the 2023 Stanford Elsevier List of World Top 2% Scientists and also selected as the USANZ Representative on the European Association of Urology Prostate Cancer Guidelines panel.

## Research Awards and Achievements

| Recipient<br>(RBWH staff in bold)   | Award  | Event  |
|---|--|--|
| <b>Matthew Roberts; Simon Harley; Karla Cullen;</b> Anita Pelecanos; Ian Vela; <b>John Yaxley; Anna Kuchel; Nattakorn Dhiantravan; Paul Thomas; David Pattison; Natasha Roberts</b> | Winner, Best of the Best Poster Presentation Award     | Australia and New Zealand Urogenital and Prostate Cancer Trials Group (ANZUP) Annual Scientific Meeting 2023 |
| <b>Harry Collin, Marnique Basto, Matthew Roberts</b>  | Winner of USANZ Northern Section 2023 Prize            | USANZ Northern Section 2023  |
| <b>Sachin Joshi, Matthew Roberts, Kenneth Thistlethwaite, Ajanthan Loganathan</b>   | Highly commended: Presentation                         | USANZ Northern Section 2023  |
| <b>Matthew Roberts</b>  | 2023 Stanford Elsevier List of World Top 2% Scientists | 2023 Stanford Elsevier List  |

## Research Grants

| Investigator Names (RBWH staff in bold) | RBWH Departments / Research Groups | Research Project Title  | Granting Body                                   | Total Awarded (whole all years) | Length of Awards in years and years active |
|---|------------------------------------|---|---|---------------------------------|--|
| <b>Matthew Roberts</b>                  | Urology                            | Prospective surgeon-led trials in Prostate Cancer for personalised management and healthcare sustainability | Viertel Foundation (Sylvia and Charles Viertel) | \$90,000                        | 2 years, 2022-2023                         |

## Current RBWH Department / Research Group Led Research Activity

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold)  | Research Project Title  | Number of RBWH Patients Recruited in 2023 |
|---|---|---|---|
| <b>Matthew Roberts</b>                      | Conduit C, Davis ID, Effenev RM, Williams S, Martin JM, Hofman MS, Hruby G, Eapen R, Gianacas C, Papa N, Lourenço RA, Dhillon HM, Allen R, Fontela A, Kaur B, Emmett L      | The Dedicated Imaging Post-Prostatectomy for Enhanced Radiotherapy outcomes (DIPPER): a multicentre, randomised trial of salvage radiotherapy versus surveillance for low-risk biochemical recurrence after radical prostatectomy | 0   |
| <b>Sachin Joshi</b>                         | <b>Matthew Roberts, Kenneth Thistlethwaite, Ajanthan Loganathan.</b>  | A single tertiary centre retrospective audit of radiation cystitis patients receiving hyperbaric oxygen treatment at the Royal Brisbane and Women' Hospital   | 0   |
| <b>Harry Collin</b>                         | <b>Matthew Roberts, Kandice Keogh</b>   | Audit of simultaneous robotic-assisted prostatectomy and rectal cancer resection cases at Royal Brisbane and Women's Hospital   | 0   |
| <b>Harry Collin</b>                         | <b>Kandice Keogh, Matthew Roberts</b>   | Simultaneous Robot-Assisted Prostatectomy with Rectal Resection – A Systematic Review   | 0   |
| <b>Harry Collin</b>                         | <b>Kandice Keogh, Matthew Roberts</b>   | Can Artificial Intelligence Devise Surveillance Regimens for Testicular Cancer?   | 0   |
| <b>Harry Collin</b>                         | <b>Kandice Keogh, Matthew Roberts</b>   | Evaluating the Quality of Artificial Intelligence Chatbot Responses to Patient Questions on Bladder Cancer  | 0   |
| <b>Harry Collin</b>                         | <b>Kandice Keogh, Matthew Roberts</b>   | Dr Bot – Does AI Provide Quality Information to Prostate Cancer Patients?   | 0   |
| <b>Harry Collin</b>                         | <b>Kandice Keogh, Matthew Roberts</b>   | Simultaneous Robot-Assisted Prostatectomy with Rectal Resection – A Systematic Review.  | 0   |
| <b>Harry Collin</b>                         | <b>Rachel Cockburn, Susan Toolis, Elizabeth Winslade, Rachel Esler</b>  | Beyond the Clinic Walls: Unveiling the Challenges of Aboriginal & Torres Strait Islander Patient Attendance in Outpatient Urology Care  | 0   |
| <b>Matthew Roberts</b>                      | Georges Mehawed, Becca Murray, Nicholas Rukin   | Is there a role for fused images and 3D anatomical models in tumour identification for urological cancer? A prospective study   | 0   |
| <b>Elisa Tran</b>                           | <b>John Yaxley, Matthew Roberts</b>   | Audit of high dose rate brachytherapy in the treatment of prostate cancer   | 0   |
| <b>Kandice Keogh</b>                        | <b>Harry Collin, C Dowling, Matthew Roberts.</b>  | Vitamin C as an adjunct to methenamine hippurate use after ALTAR: ego or evidence-based?  | 0   |
| <b>Matthew Roberts</b>                      | <b>Matthew Roberts; Simon Harley; Karla Cullen; Anita Pelecanos; Ian Vela; John Yaxley; Anna Kuchel; Nattakorn Dhantravan; Paul Thomas; David Pattison; Natasha Roberts</b> | Initial diagnostic accuracy of FDG-PET compared to PSMA-PET for newly diagnosed high risk prostate cancer prior to treatment: FIND Trial  | 0   |



## Collaborative Research Activity Involving RBWH Department / Research Group

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold)   | Research Project Title   | Number of RBWH Patients Recruited in 2023 |
|---|--|--|---|
| Buteau JP                                   | Moon D, Fahey MT, <b>Roberts MJ</b> , Thompson J, Murphy DG, Papa N, Mitchell C, De Abreu Lourenco R, Dhillon HM, Kasivisvanathan V, Francis RJ, Stricker P, Agrawal S, O'Brien J, McVey A, Sharma G, Levy S, Ayati N, Nguyen A, Lee SF, <b>Pattison DA</b> , Sivaratnam D, Frydenberg M, Du Y, Titus J, Lee ST, Ischia J, Jack G, Hofman MS, Emmett L | PRIMARY2: A Multicentre, Phase 3, Randomised Controlled Trial Investigating the Additive Diagnostic Value of [ <sup>68</sup> Ga]Ga-PSMA-11 Positron Emission Tomography/Computed Tomography in Men with Negative or Equivocal Multiparametric Magnetic Resonance Imaging for the Diagnosis of Clinically Significant Prostate Cancer | 34  |

## Research Activity With a Specific Focus on First Nations People

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold)                         | Research Project Title   | Number of RBWH Patients Recruited in 2023 |
|---|--|--|---|
| Harry Collin                                | <b>Rachel Cockburn, Susan Toolis, Elizabeth Winslade, Rachel Esler</b> | Beyond the Clinic Walls: Unveiling the Challenges of Aboriginal & Torres Strait Islander Patient Attendance in Outpatient Urology Care | 0   |

## Research Publications

### Authors

| Investigator      | ORCID ID  | Investigator        | ORCID ID  |
|-------------------|---|---------------------|---|
| Matthew Roberts   | <a href="https://orcid.org/0000-0003-0552-7402">https://orcid.org/0000-0003-0552-7402</a> | Rachel Esler        | <a href="https://orcid.org/0000-0001-7743-4841">https://orcid.org/0000-0001-7743-4841</a> |
| Rachel Esler      | <a href="https://orcid.org/0000-0001-7743-4841">https://orcid.org/0000-0001-7743-4841</a> | Anojan Navaratnam   | <a href="https://orcid.org/0000-0003-4684-0235">https://orcid.org/0000-0003-4684-0235</a> |
| Anojan Navaratnam | <a href="https://orcid.org/0000-0003-4684-0235">https://orcid.org/0000-0003-4684-0235</a> | Adam Pearce         | <a href="https://orcid.org/0000-0001-9438-1008">https://orcid.org/0000-0001-9438-1008</a> |
| Natasha Roberts   | <a href="https://orcid.org/0000-0003-0534-8084">https://orcid.org/0000-0003-0534-8084</a> | John Yaxley         | <a href="https://orcid.org/0000-0001-6566-9037">https://orcid.org/0000-0001-6566-9037</a> |
| Adam Pearce       | <a href="https://orcid.org/0000-0001-9438-1008">https://orcid.org/0000-0001-9438-1008</a> | Harry Collin        | <a href="https://orcid.org/0000-0002-5630-6047">https://orcid.org/0000-0002-5630-6047</a> |
| Kandice Keogh     | <a href="https://orcid.org/0000-0001-7424-6976">https://orcid.org/0000-0001-7424-6976</a> | Ajanthan Loganathan | <a href="https://orcid.org/0000-0003-3761-7621">https://orcid.org/0000-0003-3761-7621</a> |
| Nigel Dungleison  | N/A   |                     |   |

## Publications in 2023

### Journal Articles (RBWH staff in bold)

Bugeja JM, Mehawed G, **Roberts MJ**, Rukin N, Dowling J, Murray R. Prostate volume analysis in image registration for prostate cancer care: a verification study. *Phys Eng Sci Med*. 2023 Dec;46(4):1791-1802. doi: 10.1007/s13246-023-01342-4. Epub 2023 Oct 11. PMID: 37819450; PMCID: PMC10703743

Buteau JP, Moon D, Fahey MT, **Roberts MJ**, Thompson J, Murphy DG, Papa N, Mitchell C, De Abreu Lourenco R, Dhillon HM, Kasivisvanathan V, Francis RJ, Stricker P, Agrawal S, O'Brien J, McVey A, Sharma G, Levy S, Ayati N, Nguyen A, Lee SF, **Pattison DA**, Sivaratnam D, Frydenberg M, Du Y, Titus J, Lee ST, Ischia J, Jack G, Hofman MS, Emmett L. Clinical Trial Protocol for PRIMARY2: A Multicentre, Phase 3, Randomised Controlled Trial Investigating the Additive Diagnostic Value of [<sup>68</sup>Ga]Ga-PSMA-11 Positron Emission Tomography/Computed Tomography in Men with Negative or Equivocal Multiparametric Magnetic Resonance Imaging for the Diagnosis of Clinically Significant Prostate Cancer. *Eur Urol Oncol*. 2023 Dec 6:S2588-9311(23)00253-5. doi: 10.1016/j.euo.2023.11.008. PMID: 38061976

Doan P, Counter W, Papa N, Sheehan-Dare G, Ho B, Lee J, Liu V, Thompson JE, Agrawal S, **Roberts MJ**, Buteau J, Hofman MS, Moon D, Lawrentschuk N, Murphy D, Stricker PD, Emmett L. Synchronous vs independent reading of prostate-specific membrane antigen positron emission tomography (PSMA-PET) and magnetic resonance imaging (MRI) to improve diagnosis of prostate cancer. *BJU Int*. 2023 May;131(5):588-595. doi: 10.1111/bju.15929. PMID: 36371669

## Journal Articles (RBWH staff in bold)

Emmett L, Papa N, Counter W, Calais J, Barbato F, Burger I, Eiber M, **Roberts MJ**, Agrawal S, Franklin A, Xue A, Rasiah K, John N, Moon D, Frydenberg M, **Yaxley J**, Stricker P, Wong K, Coughlin G, Gianduzzo T, Kua B, Ho B, Nguyen A, Liu V, Lee J, Hsiao E, Sutherland T, Perry E, Fendler WP, Hope TA. Reproducibility and Accuracy of the PRIMARY Score on PSMA PET and of PI-RADS on Multiparametric MRI for Prostate Cancer Diagnosis Within a Real-World Database. *J Nucl Med*. 2023 Nov 30;jnumed.123.266164. doi: 10.2967/jnumed.123.266164. PMID: 38050155

Gondoputro W, Doan P, Katelaris A, Scheltema MJ, Geboers B, Agrawal S, Liu Z, **Yaxley J**, Savdie R, Rasiah K, Frydenberg M, **Roberts MJ**, Malouf D, Wong D, Shnier R, Delprado W, Emmett L, Stricker PD, Thompson J. <sup>68</sup>Ga-PSMA-PET/CT in addition to mpMRI in men undergoing biopsy during active surveillance for low- to intermediate-risk prostate cancer: study protocol for a prospective cross-sectional study. *Transl Androl Urol*. 2023 Oct 31;12(10):1598-1606. doi: 10.21037/tau-22-708. Epub 2023 Oct 7. PMID: 37969779; PMCID: PMC10643393

**Keogh K, Collin H**, Dowling C, **Roberts MJ**. Vitamin C as an adjunct to methenamine hippurate use after ALTAR: ego or evidence-based? *BJU Int*. 2023 Jun 12. doi: 10.1111/bju.16096. PMID: 37309292

Kelly BD, Ptasznik G, **Roberts MJ**, Doan P, Stricker P, Thompson J, Buteau J, Chen K, Alghazo O, O'Brien JS, Hofman MS, Frydenberg M, Lawrentschuk N, Landon D, Murphy DG, Emmett L, Moon D. A Novel Risk Calculator Incorporating Clinical Parameters, Multiparametric Magnetic Resonance Imaging, and Prostate-Specific Membrane Antigen Positron Emission Tomography for Prostate Cancer Risk Stratification Before Transperineal Prostate Biopsy. *Eur Urol Open Sci*. 2023 Jun 2;53:90-97. doi: 10.1016/j.euros.2023.05.002. PMID: 37441340; PMCID: PMC10334234

Mahmoud I, Sanjida S, Schwenn P, Hashem IA, **Collin H**, Chu K, Bainbridge R, Hou XY. Incidence of Discharge Against Medical Advice in Queensland Hospital Emergency Departments Among Indigenous Patients from 2016 to 2021. *J Racial Ethn Health Disparities*. 2023 Sep 22. doi: 10.1007/s40615-023-01786-0. Epub ahead of print. PMID: 37737935

McGeorge S, Loh B, Shibu R, Dobieli K, Brown NJ, **Esler R**, Hacking C, Purvey M, **Roberts MJ**. Plain x-ray misses many ureteric calculi: Time to challenge the old dogma? *BJU Compass*. 2022 Sep 26;4(1):59-61. doi: 10.1002/bco2.192. PMID: 36569499; PMCID: PMC9766866

Mehawed G, Ranasinghe S, **Roberts MJ**. Pubic symphysis septic arthritis due to urosymphyseal fistula: Conservative management can work. *Urol Case Rep*. 2023 Feb 13;47:102356. doi: 10.1016/j.eucr.2023.102356. PMID: 36866339; PMCID: PMC9972553

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**Roberts MJ**, Maurer T, Perera M, Eiber M, Hope TA, Ost P, Siva S, Hofman MS, Murphy DG, Emmett L, Fendler WP. Using PSMA imaging for prognostication in localized and advanced prostate cancer. *Nat Rev Urol*. 2023 Jan;20(1):23-47. doi: 10.1038/s41585-022-00670-6. PMID: 36473945

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Shanmugasundaram R, Saad J, Heyworth A, Wong V, Pelecanos A, Arianayagam M, Canagasingham B, Ferguson R, Goolam AS, Khadra M, Kam J, Ko R, McCombie S, Varol C, Winter M, Mansberg R, Nguyen D, Bui C, Loh H, Le K, **Roberts MJ**. Intra-individual comparison of prostate-specific membrane antigen positron emission tomography/computed tomography versus bone scan in detecting skeletal metastasis at prostate cancer diagnosis. *BJU Int.* 2023 Nov 9. doi: 10.1111/bju.16115. Epub ahead of print. PMID: 37943964

Schofield P, Hyatt A, White A, White F, Frydenberg M, Chambers S, **Gardiner R**, Murphy DG, Cavedon L, Millar J, Richards N, Murphy B, Juraskova I. Co-designing an online treatment decision aid for men with low-risk prostate cancer: Navigate. *BJUI Compass.* 2023 Aug 31;5(1):121-141. doi: 10.1002/bco2.279. PMID: 38179019; PMCID: PMC10764164

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**Yaxley JW**. Focal irreversible electroporation for treatment of primary and radio-recurrent prostate cancer - the evidence is mounting! *BJU Int.* 2023 Jun;131 Suppl 4:32-33. doi: 10.1111/bju.15987. Epub 2023 Mar 6. PMID: 36880114.

## Keynote or Plenary Lectures given in 2023

| Date   | Title  |
|--|--|
| ANZUP Annual Scientific Meeting 2023   | <b>Roberts, Matthew</b> . Prepare your pitch: Putting it on paper (or slides).   |
| ANZUP Annual Scientific Meeting 2023   | <b>Pearce, Adam</b> . Germ Cell Masterclass  |
| Society of Robotic Surgery Annual Meeting, 2023                                | <b>Yaxley, John</b> . The Lancet Randomized Trial Robot Versus Open Radical Prostatectomy: The Final Verdict                   |
| 23 <sup>rd</sup> Asia-Pacific Prostate Cancer Conference. August 2023          | <b>Yaxley, John</b> . How I manage patients with clinically node positive disease - Australian perspective                     |
| 23 <sup>rd</sup> Asia-Pacific Prostate Cancer Conference. August 2023          | <b>Yaxley, John</b> . Is PROTECT practice changing?  |
| Urological Society of Australia and New Zealand 75 <sup>th</sup> ASM. Feb 2023 | <b>Yaxley, John</b> . DEBATE - Lymphadenectomy for prostate cancer in the PSMA era - Dead or Alive                             |
| Society of Robotic Surgery Annual Meeting, 2023                                | <b>Navaratnam, Anojan</b> . Robotic Neobladder – Tips and Tricks   |
| 2023 USANZ Northern Section Annual Meeting                                     | <b>Harry Collin</b> . Multi-Centre Audit of Holmium Laser Enucleation of the Prostate (HoLEP) – Initial experience in Brisbane |
| 23 <sup>rd</sup> Asia-Pacific Prostate Cancer Conference 2023                  | <b>Harry Collin</b> Simultaneous Robot-Assisted Prostatectomy with Rectal Resection – A Systematic Review                      |

|  |  |
|--|--|
| 23 <sup>rd</sup> Asia-Pacific Prostate Cancer Conference 2023              | <b>Harry Collin</b> Doctor Bot – Does Artificial Intelligence Provide Quality Information to Prostate Cancer Patients      |
| 23 <sup>rd</sup> Asia-Pacific Prostate Cancer Conference 2023              | <b>Harry Collin</b> Can Artificial Intelligence Provide Evidence-Based Responses to Clinical Questions on Prostate Cancer? |
| 23 <sup>rd</sup> Asia-Pacific Prostate Cancer Conference 2023              | <b>Harry Collin</b> Lu-PSMA Therapy – Practical Considerations for Urologists  |
| Society of Robotic Surgery Annual Meeting, 2023                            | <b>John Yaxley</b> . Panel Chair. Session 1: Urology Abstracts   |
| 23 <sup>rd</sup> Asia-Pacific Prostate Cancer Conference. 2023             | <b>John Yaxley</b> . Multidisciplinary Plenary   |
| 23 <sup>rd</sup> Asia-Pacific Prostate Cancer Conference. 2023             | <b>John Yaxley</b> . Multidisciplinary Team Panel: Advanced Disease and Survivorship                                       |
| Urological Society of Australia and New Zealand 75 <sup>th</sup> ASM. 2023 | <b>Esler, Rachel</b> . Upper Tract Robotic Surgery Masterclass   |
| Urological Society of Australia and New Zealand 75 <sup>th</sup> ASM. 2023 | <b>Yaxley, John</b> . USANZ Prostate Imaging Masterclass 2023  |

# Vascular Surgery Department & Vascular Surgery Research Group at the Herston Biofabrication Institute

## Research highlights

In 2023, the Royal Brisbane and Women's Hospital Vascular Outpatient Research Department established a partnership with the VasoActive research group at the University of Sunshine Coast and commenced recruitment for the FOOT-Pad Trial. The trial aims to evaluate if the use of a muscle stimulation device in those with peripheral arterial disease can improve the symptoms of claudication and increase walking distances.

The Vascular Surgery Outpatient Research Department continued its strong collaboration with Professor Jonathan Golledge of the Queensland Research Centre for Peripheral Vascular Disease (QRCPVD) at James Cook University. Recruitment for two large trials continued into 2023 and included the Metformin Aneurysm Trial (MAT) and the OPTIMAL trial. Professor Jonathan Golledge and Dr Jason Jenkins have authored 4 research publications together in the past year in respected journals.

Herston Biofabrication Institute (HBI) and the Vascular Biofabrication Research Group (VBRG) continue to progress modern manufacturing techniques centred towards safer, individualised and robust surgery. The key research programs include:

- Establishment of an advanced surgical training suite incorporating perfused 3D-printed vasculature in a clinically relevant surgical environment.
- The development of soft robotic catheters for endovascular surgery.
- The development of 3D printed resorbable endovascular devices incorporating biodegradable polymers and graphene.
- The development of off-the-shelf tissue engineered vascular grafts.

The VBRG published two scientific papers in respected peer-reviewed research journals.

## Research Grants

| Investigator Names (RBWH staff in bold)  | RBWH Departments / Research Groups   | Research Project Title  | Granting Body                                | Total Awarded (whole all years) | Length of Awards in years and years active |
|--|--|---|--|---------------------------------|--|
| <b>Dr Jason Jenkins, Dr Nigel Pinto</b>  | Vascular Biofabrication Research Group at Herston Biofabrication Institute | Advanced manufacturing and simulation of vascular anatomy, novel endovascular devices, medical applications of graphene | Herston Biofabrication Institute             | \$1,600,000                     | 6 years, 2018-2024                         |
| <b>Dr Jason Jenkins, Dr Danella Favot, Dr Murray Ogg, Dr Nigel Pinto,</b><br>Professor Jonathan Golledge | Vascular Outpatients   | The Metformin Aneurysm Trial (MAT)  | NHMRC  | \$4,998,679.50                  | 5 years, 2020-2024                         |
| <b>Dr Jason Jenkins, Dr Danella Favot, Dr Murray Ogg, Dr Nigel Pinto,</b><br>Professor Jonathan Golledge | Vascular Outpatients   | Metformin for Treating Peripheral Artery Disease-Related Walking Impairment (MERIT)                                     | SERTA Grant – Townsville University Hospital | \$50,000                        | 3 years, 2021-2024                         |
| <b>Dr Murray Ogg,</b><br>Professor Jonathan Golledge   | Vascular Outpatients   | The Holistic Peripheral Artery Disease Management Trial (OPTIMAL)   | Heart Foundation Strategic Funding           | \$1,000,000                     | 3 years, 2021-2024                         |
| <b>Dr Murray Ogg,</b><br>Professor Jonathan Golledge   | Vascular Outpatients   | The Tele-Artery Trial   | Medical Research Future Funds                | \$2,862,084                     | 4 years, 2022-2025                         |

| Investigator Names (RBWH staff in bold)            | RBWH Departments / Research Groups | Research Project Title   | Granting Body                | Total Awarded (whole all years) | Length of Awards in years and years active |
|--|------------------------------------|--|------------------------------|---------------------------------|--|
| <b>Dr Murray Ogg</b> , Professor Jonathan Golledge | Vascular Outpatients               | The Supervised Home-based exercise program for Peripheral artery disease trial (SHAPE) | Medical Research Future Fund | \$999,999.71                    | 4 years, 2023-2026                         |

### Current RBWH Department / Research Group Led Research Activity

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold)         | Research Project Title   | Number of RBWH Patients Recruited in 2023 |
|---|--|--|---|
| <b>Dr Lucy Guazzo</b>                       | <b>Dr Jason Jenkins, Dr Nigel Pinto</b>                | Establishment of an advanced surgical training suite incorporating perfused 3D-printed vasculature in a clinically relevant surgical environment | N/A                                       |
| <b>Dr Lucy Guazzo</b>                       | <b>Dr Jason Jenkins, Dr Nigel Pinto</b> , Angus Weekes | The development of 3D printed resorbable endovascular devices incorporating biodegradable polymers and graphene                                  | N/A                                       |
| <b>Dr Nigel Pinto</b>                       | <b>Dr Jason Jenkins</b> , Angus Weekes                 | The development of off-the-shelf tissue engineered vascular grafts   | N/A                                       |

### Collaborative Research Activity Involving RBWH Department / Research Group

| Lead Investigator Name (RBWH staff in bold)        | Other Study Investigators (RBWH staff in bold)   | Research Project Title                         | Number of RBWH Patients Recruited in 2023 |
|--|--|--|---|
| <b>Dr Murray Ogg</b> , Prof Jonathan Golledge      | <b>Julie Jenkins</b>   | MAT  | N/A                                       |
| <b>Dr Murray Ogg</b> , Prof Jonathan Golledge,     | <b>Julie Jenkins</b>   | OPTIMAL  | N/A                                       |
| <b>Dr Murray Ogg</b> , Professor Jonathan Golledge | <b>Julie Jenkins</b>   | TEAL   | N/A                                       |
| <b>Dr Jason Jenkins</b> , Prof Christopher Askew   | <b>Dr Nicholas Boyne, Dr Allan Kruger, Dr Murray Ogg, Dr Danella Favot, Dr Nigel Pinto, Dr Samantha Peden, Dr Lucy Guazzo, Julie Jenkins, Michelle McGrath</b> | Foot-PAD Trial                                 | N/A                                       |
| <b>Department of Endocrinology</b>                 | <b>Dr Jason Jenkins, Dr Murray Ogg, Dr Lucy Guazzo, Dr Danella Favot</b>   | Assistance with recruitment to multiple trials | N/A                                       |

## Research Publications

### Authors

| Investigator      | ORCID ID  | Investigator      | ORCID ID |
|-------------------|---|-------------------|----------|
| Dr Nigel Pinto    | <a href="https://orcid.org/0000-0003-1012-1060">https://orcid.org/0000-0003-1012-1060</a> | Dr Lucy Guazzo    |          |
| Dr Samantha Peden | <a href="https://orcid.org/0000-0002-8470-4990">https://orcid.org/0000-0002-8470-4990</a> | Dr Vidushi Lal    |          |
| Dr Allan Kruger   |   | Teal Derbogossian |          |
| Dr Nicholas Boyne |   | Samantha Hill     |          |
| Dr Danella Favot  |   | Tony Lightfoot    |          |
| Dr Jason Jenkins  |   | Dr Murray Ogg     |          |

## Publications in 2023

### Journal Articles (RBWH staff in bold)

Nguyen P, Stanislaus I, McGahon C, **Pattabathula K, Bryant S, Pinto N, Jenkins J, Meinert C**. Quality assurance in 3D-printing: A dimensional accuracy study of patient-specific 3D-printed vascular anatomical models. *Frontiers in Medical Technology*. 2023

Weekes A, Wehr G, **Pinto N, Jenkins J**, Li Z, **Meinert C**, Klein TJ. Highly compliant biomimetic scaffolds for small diameter tissue-engineered vascular grafts (TEVGs) produced via melt electrowriting (MEW). *Biofabrication*. 2023

Ho KK, **Guazzo L**, Muller J. Neurogenic thoracic outlet syndrome: When to consider the diagnosis and current management options. *Australian journal of general practice*. 2023

Golledge J, Velu R, Quigley F, **Jenkins J**, Singh TP. The predictive value of four serum biomarkers for major adverse events in patients with small abdominal aortic aneurysm. *Journal of Vascular Surgery*. 2023

Morris D, Singh T, Zaman T, Velu R, Quigley F, **Jenkins J**, Golledge J. Rates of Stroke in Patients With Different Presentations of Carotid Artery Stenosis. *Eur J Vasc Endovasc Surg*. 2023

Singh T, Moxon J, Gasser T, **Jenkins J**, Bourke M, Bourke B, Golledge J. Association between aortic peak wall stress and rupture index with abdominal aortic aneurysm-related events. *Euro Radiology*. 2023

Golledge J, Yip L, Venn A, Leicht A, **Jenkins J**, Fiatarone Singh M, Reid C, Ademi Z, Parmenter B, Moxon J, Burton N. Effect of Brief Counseling by Allied Health Professionals on Step Count of People With Peripheral Artery Disease: A Randomized Clinical Trial. *JAMA Cardiol*. 2023

Hunt J, Cavallucci D, **Boyne N**, Brown N, O'Rourke N. Correct identification of visceral artery aneurysms is critical. *ANZ Journal of Surgery*. 2023

Narayanan A, Hanna J, Okamura-Kho A, Tesar J, Lim E, **Peden S**, Dean A, Taumoepeau L, Katib N, Lyons O, Khashram M. Management of secondary aorto-enteric fistulae: a multi-centre study. *ANZ Journal of Surgery*. 2023

**Hill S**, White A. Making the transition from student to newly qualified vascular sonographer: An exploration of the domains of professionalism. *Ultrasound*. 2023

**Derboghossian T, Hill S, Peden S, Lightfoot T**. Intravascular lobular capillary haemangioma of the external jugular vein: case report. *Sonography*. 2023.

### Oral Presentations (RBWH staff in bold)

**Lal V, Guazzo L**. The tyranny of distance? Outcomes of lower extremity trauma in Southeast Queensland. ANZ Vascular Conference 2023. Cairns, QLD AU

**Lal V, Peden S**. Outcomes of elective open thoracoabdominal aortic aneurysm repairs. Asia Society of Vascular Surgery 2023. Antalya, Turkey.

### Poster Presentations (RBWH staff in bold)

**Derboghossian T, Hill S, Lightfoot T**. Minimum lumen diameter in haemodialysis access arteriovenous fistulae. Herston Health Symposium 2023. Brisbane, QLD AU

**Derboghossian T**, McGrath M, Redhead A, Warren S, Cullen S, **Ogg M & Jenkins J**. Early experience of a vascular outreach program to prevent and treat serious foot disease in Aboriginal and Torres Strait Islander people. Herston Health Symposium 2023. Brisbane, QLD AU.

# Professor Stuart Pegg Burns Centre

## Research highlights

The Professor Stuart Pegg (PSP) Burns Centre provides all adult burn care for the state of Queensland, presenting an excellent opportunity for innovative translational research. Co-located with the Queensland Skin Culture Centre and the Herston Biofabrication Institute and in strong partnership with The Jamieson Trauma Institute, STARS, QUT and Fiona Wood Burns Research Centre places the Burns unit in a unique position for world-class research.

The Burns research programmes leads innovative research into improving patient outcomes for patients following burns, with research projects ranging from in vitro explorative studies, new treatments to novel approaches to patient management and therapy.

Research in 2023 is highlighted by the multidisciplinary range of projects aiming to improve patient outcomes.

## Research Grants

| Investigator Names (RBWH staff in bold) | RBWH Departments / Research Groups | Research Project Title   | Granting Body         | Total Awarded (whole all years) | Length of Awards in years and years active |
|---|------------------------------------|--|-----------------------|---------------------------------|--|
| Andrea McKittrick                       | OT Burns                           | A feasibility study comparing 3D scanning technology and current standard of care when measuring limbs | 2023 ANZBA SEED Grant | \$5000                          | 1 year, 2023                               |

## Current RBWH Department / Research Group Led Research Activity

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold)   | Research Project Title  | Number of RBWH Patients Recruited in 2023 |
|---|--|---|---|
| <b>Jason Brown</b>                          | <b>Peter Gillies, Andrew Dally</b>   | Collection of skin tissue from burn wounds in adults. The Queensland Skin Culture Centre (QSCC) Biobank   | 5   |
| <b>Teresa Matthews</b>                      | <b>Jason Miller, Michael Rudd, Michael Muller, Jason Brown, Carl Lisec, Keith Townsey</b>                            | Professor Stuart Pegg Adult Burn Centre (PSPABC), Royal Brisbane & Women's Hospital (RBWH) submitting data to the Burns Registry of Australia and New Zealand (BRANZ)     | N/A                                       |
| <b>Liz Vujcich</b>                          | <b>Jason Brown, Michelle Donovan, Noah Betar</b>   | ELATE - Early versus late ablative CO2 fractional laser treatment evaluation  | 2   |
| <b>Andrea McKittrick</b>                    | <b>Michelle Donovan, Amber Jones, Jason Brown, Liz Vujcich, Sue Laracy, Jennifer Strong</b>                          | ELEVATE - Feasibility, Acceptability and Safety of Vacuum Therapy on Burn Scar outcomes   | 4   |
| <b>Jason Brown</b>                          | <b>Andrea Mc Kittrick, Mathilde Desselle, David Forrestal, Roozbeh Fakhr, Danielle Herbert, Aleksandra Edmundson</b> | A pilot study to implement technology (3D Scanning and Printing) to improve long term burn facial scarring outcomes across the spectrum of care                           | 6   |
| <b>Carl Lisec</b>                           | <b>Jason Brown, Amelia Perri, Allison Hill, Amber Jones, Anita Plaza, Kate McCrossin, Andrea McKittrick,</b>         | A pilot study assessing the feasibility of NexoBrid versus the current standard of care of isolated upper limb burns: A solution to "the perfect crime"?                  | 3   |
| <b>Dr Lynne Heyes,</b>                      | <b>Jason Brown, Darcy Andrews</b>  | Psychological support: Burns survivor peer support program  | 0   |
| <b>Peter Gillies</b>                        | <b>Andrew Dalley, Jason Brown, Danielle Herbert</b>  | Pilot study to recapitulate the proliferative epithelial niche in acellular de-epidermised dermis: Herston Biofabrication Institute (HBI) Burns Statewide Service program | N/A                                       |



| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold)   | Research Project Title  | Number of RBWH Patients Recruited in 2023 |
|---|--|---|---|
| <b>Peter Gillies</b>                        | Amanda Kijas (UQ), <b>Andrew Dalley</b> , Alan Rowan (UQ), <b>Jason Brown</b> , Danielle Herbert | Functionalised hydrogel and/or fibrin for keratinocyte culture. Herston Biofabrication Institute (HBI) Burns Statewide Service program. | N/A                                       |
| <b>Andrea McKittrick</b>                    | <b>Jason Brown</b> , <b>Aleksandra Edmundson</b> , Mathilde Desselle, Marita Prior               | A feasibility study comparing 3D scanning technology and current standard of care when measuring limbs                                  | 0   |

### Current [RBWH Department Quality Improvement Activity](#)

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold) | Project Title   |
|---|--|---|
| <b>Michael Muller</b>                       | <b>Jenyu Shaw</b>                              | Indigenous Outcomes in Major Burns ( $\geq 20\%$ TBSA)  |
| <b>Elizabeth Vujcich</b>                    | <b>Jenyu Shaw</b>                              | Assessment of morbidity and mortality in Burns utilising the ITRAQI compared to the remoteness in Australia (ARIA+) |
| <b>Carl Lisec</b>                           | <b>Michelle Duff</b>                           | A RBWH audit of lithium-ion battery related burns and explosions  |

### Collaborative Research Activity [Involving RBWH Department / Research Group](#)

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold)   | Research Project Title  | Number of RBWH Patients Recruited in 2023 |
|---|--|---|---|
| <b>Jayesh Dhanani</b>                       | <b>Carl Lisec</b> , <b>Michael Reade</b> , <b>Paul Gray</b> , <b>Jason Roberts</b> , <b>Andrew Claus</b> , <b>Amelia Perri</b> , <b>Cheryl Fourie</b> , <b>Jason Pincus</b> , <b>Amelia Livermore</b> , <b>Anita Plaza</b> | Evaluating whether nebulized dexmedetomidine can be used for pain management in burn injury dressing changes.: A phase III pilot feasibility, randomized controlled crossover trial   | 14  |
| Nichole Foster                              | Dale Edgar, Fiona Wood, Mark Fear, Nathan Pavlos, Edward Raby, Elizabeth Capell, Frank Li, <b>Jason Brown</b> , Aaron Tay, Leila Cuttle  | Traumatic Heterotopic Ossification: Exploring Prevalence, Risk Factors, Prevention and Treatment  | 0   |
| Kiarash Khosrotehrani (UQ)                  | Alan Rowan (UQ), <b>Abbas Shafiee</b> , <b>Jason Brown</b>   | Effective solutions for full restoration of skin barrier and function. HBI Skin & Wounds sub-program.   | N/A                                       |
| Alan Rowan (UQ)                             | Amanda Kijas (UQ), <b>Jason Brown</b> , <b>Peter Gillies</b> , <b>Andrew Dalley</b> , Michaela George (UQ)   | Guiding immune regulation using smart biomaterials to promote scarless wound healing. HBI Skin & Wounds sub-program.  | QSCC Biobank                              |
| Mathilde Desselle (HBI)                     | Lucy Holland (QUT), Roger Altizer (QUT), Natalie Bradford (QUT), <b>Jason Brown</b> (RBWH), Ross Brown QUT) <b>Andrea Mc Kittrick</b>  | Co-design of an Innovative Virtual Reality (VR) Environment as a Pain and Anxiety Augmented Relief Method in Burns Survivors and Adolescents and Young Adults (AYAs) with Cancer  |   |
| <b>Jason Brown</b>                          | Leila Cuttle, Abbas Shafiee, <b>Peter Gillies</b> , <b>Andrew Dalley</b>   | 1) Adopt a technique to produce human decellularised dermis,<br>2) Produce a bio-ink/hydrogel from human decellularised dermis,<br>3) Develop a specialised spray apparatus for the delivery of keratinocyte colonies immersed in bio-ink | N/A                                       |

## Research Publications

### Authors

| Investigator | ORCID ID  |
|--------------|---|
| Jason Brown  | <a href="https://orcid.org/0000-0002-8386-1118">https://orcid.org/0000-0002-8386-1118</a> |

### Publications in 2023

#### Journal Articles (RBWH staff in bold)

Abbas Shafiee, Jane Sun, Imaan A. Ahmed, Felicia Phua, Gustavo R. Rossi, Cheng-Yu Lin, Fernando Souza-Fonseca-Guimaraes, Ernst J. Wolvetang, **Jason Brown**, Kiarash Khosrotehrani. Development of Physiologically Relevant Skin Organoids from Human Induced Pluripotent Stem Cells. *Small*. Dec 2023

Abbas Shafiee, J. Sun, I. Ahmed, **Jason N Brown**, K. Khosrotehrani. 1439 Development of a complex skin organ in human induced pluripotent stem cell-derived organoids. *J Investigative Dermatology* 2023. 143(5) S246

Noah Betar, **Declan Maher**, **Lucas Wheatley**, Timothy Baker, **Jason Brown**. Clinical outcomes and resource utilisation in patients with major burns treated with NovoSorb® BTM. *Burns* 2023. 49(7): 1663-1669

Betar N, Warren J, Adams J, Herbert D, **Vujcich E**, Maitz P, **Brown J**. Intravenous iron therapy to treat burn anaemia: A retrospective cohort study. *Burns*. 2023 Jun;49(4):813-819

Betar N, Warren J, Adams J, Herbert D, **Vujcich E**, Maitz P, **Brown J**. Iron status in patients with burn anaemia. *Burns*. 2023 May;49(3):701-706

**Murray-Douglass A**, **Vujcich E**. Predicting mortality and admission duration for burns patients in Queensland, Australia: a retrospective cohort study. *ANZ J Surg*. 2023 Mar;93(3):566-571

**Dhanani J**, Pincus J, Townsend S, Pang G, **Vujcich E**, Windsor M, **Reade MC**. Delayed Tracheoesophageal Fistula and Refractory Respiratory Failure Caused by Inhalation Burns and Emergency Venovenous ECMO to Facilitate Its Management: A Case Report. *J Burn Care Res*. 2023 May 2;44(3):734-739

Paratz JD, Warren J, Paratz E, Watt K, Corte-Real V, **Muller MJ**, **Cameron CM**. Cardiovascular mortality post burn injury. *J Trauma Acute Care Surg*. 2023 Mar 1;94(3):408-416

Mathilde R Desselle, Lucy R Holland, **Andrea McKittrick**, **Glen Kennedy**, Patsy Yates, **Jason Brown**. "A Wanderer's Tale": The development of a virtual reality application for pain and quality of life in Australian burns and oncology patients. *Palliat Support Care* 2023 Jun;21(3):454-460

**O'Reilly S**, **Strong J**, Ziviani J, **Brown J**, McAuliffe T. The Role of the Outpatient Occupational Therapist Treating Patients With Small Burns: A Retrospective Audit of Practice. *J Burn Care Res*. 2023 Jan 5;44(1):87-94.

# Trauma Service

## Research highlights

The Trauma Service's strong collaborations with Jamieson Trauma Institute, QUT (Centre of Healthcare Transformation, School of Information Systems and School of Creative Practice), (Australian Centre for Health Services Innovation AusHSI), UQ (Trauma Science Group, Australian Institute of Bioengineering and Nanotechnology AIBN and Translational Research Institute TRI) and other QH research groups, such as Gold Coast Health and State-wide Trauma Clinical Network – Research group, positions the unit in a unique position for innovative research opportunities and research output.

## Research Awards and Achievements

| Recipient<br>(RBWH staff in bold)                        | Award   | Event   |
|--|---|---|
| <b>Nathan Peters, Frances Williamson, Claire Richard</b> | 2023 Gilbert Brown Prize for the best contribution to the Gilbert Brown Prize Session | Australian and New Zealand College of Anaesthetists Annual Scientific Meeting |

## Research Grants

| Investigator Names (RBWH staff in bold)  | RBWH Departments / Research Groups        | Research Project Title  | Granting Body                                    | Total Awarded (whole all years) | Length of Awards in years and years active |
|--|---|---|--|---------------------------------|--|
| <b>Frances Williamson</b> , Zephania Tyack, Victoria McCreanor, Martin Wullschleger, <b>Jacelle Warren, Michael Handy</b> , Steven McPhail | Trauma Service, Jamieson Trauma Institute | Value-based trauma care: understanding the cost, effect and implementation of an innovative specialist-led multidisciplinary trauma admitting service | Metro North Health Collaborative Research Grants | \$49,913.54                     | 2 years, 2021-2023                         |
| <b>Frances Williamson, Micheal Muller</b> , Kate Thompson  | Emergency and Trauma Service              | Can interactive online learning using enhanced technology adequately teach trauma-based procedural skills to emergency nursing clinicians?            | Emergency Medicine Foundation                    | \$97,469                        | 1 year, 2023-2024                          |

## Current RBWH Department / Research Group Led Research Activity

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold)   | Research Project Title  | Number of RBWH Patients Recruited in 2023 |
|---|--|---|---|
| <b>Frances Williamson</b>                   | Victoria McCreanor, Zephania Tyack, Martin Wullschleger, <b>Jacelle Warren, Michael Handy</b> , Steven McPhail | Value-based trauma care: understanding the cost, effect and implementation of an innovative specialist-led multidisciplinary trauma admitting service |   |
| <b>Lucas Wheatley</b>                       | <b>Michael Rudd, Perry Cleland, Jacelle Warren</b>   | Cutaneous and radiological seatbelt signs indicating hollow viscus injury   | NA  |

## Current RBWH Department Quality Improvement Activity

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold)   | Project Title   |
|---|--|---|
| <b>Carl Lisec</b>                           | <b>Madeleine Kelly, Grace Kwok, Daniel Chan</b>  | Is being green worth the spleen? A retrospective audit of electronic scooter trauma in Major Queensland Hospital.                                     |
| <b>Frances Williamson</b>                   | Victoria McCreanor, Zephania Tyack, Martin Wullschleger, <b>Jacelle Warren, Michael Handy</b> , Steven McPhail | Value-based trauma care: understanding the cost, effect and implementation of an innovative specialist-led multidisciplinary trauma admitting service |

## Collaborative Research Activity Involving RBWH Department / Research Group

| Lead Investigator Name (RBWH staff in bold) | Other Study Investigators (RBWH staff in bold)   | Research Project Title  | Number of RBWH Patients Recruited in 2023 |
|---|--|---|---|
| <b>Beat Schmutz</b>                         | Andreas Kouzelis, <b>Frances Williamson, Gary Mitchell, Michael Schuetz, Silvia Manzanero</b>  | Patient-specific pelvic and acetabular fracture classification using Artificial Intelligence  | 127                                       |
| <b>Beat Schmutz</b>                         | <b>Ashish Wadhawan, Michael Schuetz, Kevin Tetsworth</b> , Jason Dowling, Pierrick Bourgeat, Jurgen Fripp, <b>Frances Williamson, Gary Mitchell</b>            | Development of an Artificial Intelligence screening system to identify patients requiring a CT scan following distal radius fractures | 0   |
| <b>Jeffrey Lipman</b>                       | Timothy Hardcastle, <b>Elizabeth Studley</b> , Martin Wullschleger, <b>Carl Lisec, Silvia Manzanero, Olivia Zheng</b> , Jonathan Ko, Victor Kong, Damian Clark | Comparison of trauma systems between Queensland and KwaZulu-Natal province (South Africa)   | NA  |
| Dylan Flaws                                 | Vivienne Tippett, Sue Patterson, <b>Michael Handy</b> – Project funded by JTI  | UR-TOPIC – Understanding Recovery and Tracking Outcomes of Post Intensive Care  | 6   |

## Research Publications

### Authors

| Investigator       | ORCID ID  |
|--------------------|---|
| Frances Williamson | <a href="https://orcid.org/0000-0002-5476-1791">https://orcid.org/0000-0002-5476-1791</a> |

### Publications in 2023

#### Journal Articles (RBWH staff in bold)

Butterfield M, **Bodnar D, Williamson F**, Parker L, Ryan G. Prevalence of secondary insults and outcomes of patients with traumatic brain injury intubated in the prehospital setting: a retrospective cohort study. *Emerg Med J.* 2023;40(3):167-74

**Joarder M, Moussaoui HNE, Das A, Williamson F, Wullschleger M.** Impact of Time and Distance on Outcomes Following Tourniquet Use in Civilian and Military Settings: a Scoping Review. *Injury.* 2023;54(5):1236-45

**Lawton CF, Williamson F.** Response to Re: Outcomes in traumatic cardiac arrest patients who underwent advanced life support. *Emerg Med Australas.* 2023;35(4):706-7

Min H, Rabi Y, **Wadhawan A**, Bourgeat P, Dowling J, White J, Tchernegovski A, Formanek B, **Schuetz M, Mitchell G, Williamson F, Hacking C, Tetsworth K, Schmutz B.** Automatic classification of distal radius fracture using a two-stage ensemble deep learning framework. *Phys Eng Sci Med.* 2023; 46(2):877-86

**Williamson F, Lawton CF, Wullschleger M.** Outcomes in traumatic cardiac arrest patients who underwent advanced life support. *Emerg Med Australas.* 2023;35(2):205-12

Helena Franco, **Frances Williamson, Silvia Manzanero, Michael Schuetz**, Clavicle fixation to reduce short-term analgesia and improve respiratory function in patients with chest wall injuries. *Archives of Orthopaedic and Trauma Surgery* 2023.