

# Cancer Care Services

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**Assoc. Prof. Glen Kennedy**  
Executive Director  
Cancer Care Services



**Gillian Nasato**  
Nursing Director  
Cancer Care Services

Cancer Care Services (CCS) at RBWH provides expert, highly skilled, evidence-based care to patients affected by cancer and non-malignant haematological conditions, including haemophilia. As a service committed to striving for excellence, our multidisciplinary research team is an integral part of ensuring the provision of cutting edge treatment to our patients. The Cancer Care research team includes the Cancer Nursing Professorial Precinct, Medical Oncology, Radiation Oncology, and Haematology, including the Haemophilia Centre and Bone Marrow Transplant Unit. Research is considered core business within Cancer Care, and a vehicle to the facilitation of progressive treatment for our patients.

2015 represented another year of fantastic achievement in research for Cancer Care. The annual CCS Research Retreat brought together investigators from CCS and senior hospital and district executives to enable planning to ensure that research remains at the forefront of our service both now and into the future. The 2<sup>nd</sup> Biennial Research Excellence in Cancer involved leading cancer researchers from across South-east QLD presenting local achievements and developments in cancer research. A highlight from the event was keynote speaker Professor Ian Frazer AC discussing the role of our skin immune system in cancer prevention.

The Cancer Nursing Professorial Precinct is a strategic initiative of CCS, RBWH and the School of Nursing, QUT. Through strong collaboration with QUT and other research partners, the precinct seeks to further improve outcomes for people affected by cancer through high quality clinical research and the delivery of evidence-based nursing care. Nursing researchers worked to secure over 15 different SEED, travel and top up grants to a value in excess of \$600,000 in 2015. The Central Venous Access Device registry and DEM Avoidance project both received SEED Innovation funding with a combined value of over \$100,000.

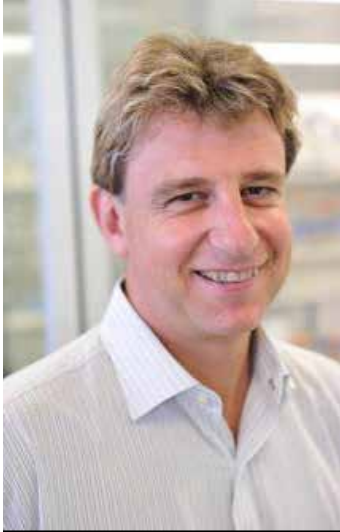
The CCS Medical oncology department has an ongoing, active clinical research program and acts as a major tertiary referral centre in QLD. In 2015, medical oncology had 94 clinical trials open including 14 new studies resulting in 616 patients on study. RBWH foundation grants were received for the Neuroendocrine Tumour (NET) Survivorship project, a rare tumour. Collaborative research is ongoing with other RBWH departments such as qualitative research links to the School of Social Sciences at the University of NSW.

The Radiation Oncology research program in 2015 was particularly active in areas of head and neck cancer, skin cancer and brain metastases. The installation of new modern radiotherapy technology provided a platform for expanded physics research, and many investigator initiated projects have been developed. Strong research partnerships with our allied health team, especially in areas of diet and nutrition, continue to be forged.

The Haematology and Bone Marrow Transplant Clinical Research Unit provide an exceptional research program for complex haematological malignancies including clinical, translational and basic science research in leukaemia, lymphoma, myeloma and transplant immunology. In 2015 the team continued to secure several prestigious NHMRC grants, and presented preliminary findings from the haploidentical transplant study with gene-modified donor T cell add back at both national and international meetings. This phase 1 study is a collaboration between the QIMR Berghofer and RBWH bringing cutting edge technology to our patient population.

The Haemophilia Unit was also busy in 2015, launching a national patient “app” called “myABDR”. This app includes a patient treatment diary and is anticipated that aggregated de-identified data generated by the app will give a better picture of how further assistance can be given to patients with inherited bleeding disorders.

As we look forward to 2016 we continue to strive to further expand and embed research within CCS across all patient and disease groups, incorporating new and novel approaches to care within clinical, translational and basic science research programmes and partnerships, aiming to constantly improve clinical outcomes for our patients.



**Prof. Geoff Hill**  
Research Director  
Cancer Care Services

The achievements of academic Haematologists at RBWH undertaking discovery and translational science across both QIMR Berghofer and RBWH include:

Prof Geoff Hill was an NHMRC Australia fellow and was awarded a subsequent NHMRC Senior Principal Research Fellowship in 2015. He published 18 articles in 2015 including papers in JEM, JCI, PNAS and Blood. Primary papers, with accompanying commentaries, defined new paradigms of acute lung injury and new pathogenic T cell subsets after transplant. A landmark study in JEM defined how a donor dendritic cell subset in the colon dictates transplant lethality. These studies define new therapeutic strategies to improve transplant outcome. Clinical trials, based on preclinical discovery, continue on inflammatory cytokine inhibition to prevent graft-versus-host disease (GVHD) and interferon based cytokines to prevent leukaemia relapse. New funding from the Wellcome Trust and Cancer Council Queensland was awarded to generate and study small molecule inhibitors of T cell differentiation. Prof Hill continued to serve on the editorial board of Blood and was inducted as a Fellow to the Australian Academy of Health and Medical Sciences.

A/Prof Steve Lane is a clinical NHMRC Career Development Fellow, focussing on the mechanisms of malignant transformation within haematopoiesis. He published 6 papers in 2015, including two in Nature and additional works in Blood and FASEB. Consistent with the impact of this work, he was awarded two large NHMRC project grants in 2015 as CIA that will define the ability to target leukaemia stem cells by telomerase inhibition and a study of the evolution of AML via in vitro transformation. The telomerase work follows a landmark recent publication in Cell Stem Cell and has led to a new clinical study of telomerase inhibition in AML with novel small molecule inhibitors. Dr Lane is the coordinator of haematology research at RBWH.

Dr Siok Tey is an NHMRC Early Career Fellow, focusing on cell therapy and transplantation. A particular emphasis is on engineering gene-modified T cells to more safely target pathogen and leukaemia-specific T cell responses. Dr Tey was awarded a NHMRC project grant in 2015 as CIA to study CMV responses after transplant. She published three articles in 2015 and has developed extensive collaborative ties with the biotechnology industry in Houston, USA to continue the translation of her research into patients at RBWH.

Dr Kate Markey is post MBBS/PhD and an advanced trainee in Haematology. She was awarded an inaugural QLD Health Junior Research Fellowship to develop novel molecular assays of sepsis in high risk patients and investigate relationships to patient microbiome signatures using sequencing approaches. She was one of only 20 trainee Haematologists selected worldwide to attend a Translational Research Training in Haematology workshop in Milan, run by the European Haematology Association and American Society of Hematology.

Dr Andrea Hendon is a Haematologist and Leukaemia Foundation of Australia PhD scholar, defining the role of new interferons on transplant outcome in both preclinical and clinical studies, publishing an initial review on the subject.

# Haematology, Bone Marrow Transplant and Haemophilia

The Haematology and Bone Marrow Transplant Clinical Research Unit provides a comprehensive research program for patients with complex haematological malignancies including leukaemia, lymphoma and myeloma. As the Clinical Haematology Referral Centre for the Central Zone, and the Bone Marrow Transplant Referral Centre for Queensland, this team communicates, collaborates and contributes to state and international bodies to improve treatment, outcomes and patient care.

In addition to achieving FACT accreditation again this year, research staff involvement across the department of Haematology and Bone Marrow Transplant, has been highlighted with several poster and podium presentations at well attended National and International meetings.

The unit conducts a wide range of innovative trials, Phase I to Phase IV, in the area of haematological malignancies. These trials include the testing of new therapeutic agents for the treatment of leukaemia, lymphoma and myeloma as well as improvements in the outcome of bone marrow transplantation and ongoing participation in the development of novel treatments.

There is an ongoing collaboration between departmental clinical staff and the QIMR Berghofer which corresponds to an improved ability to develop and participate in translational research programs. Preclinical models are used to dissect the immunological mechanisms of transplant rejection and the cellular mechanisms of leukemogenesis, with the aim of developing targeted therapies to improve patient outcomes.

The Queensland Haemophilia Centre is a state-wide service based at RBWH. The centre provides comprehensive care for those with haemophilia and other inherited bleeding disorders. Designated staff provide medical, nursing, physiotherapy and psychosocial input into patient care. This includes specialised support including diagnosis, factor replacement therapy, musculoskeletal and orthopaedic assessment, management, care and support in relation to blood borne viruses, genetic counselling and psychosocial support.

## Supervised Post-graduate Research Students

Name	Current Studies University ( <i>duration</i> )	Research Project Title	Supervisors ( <i>RBWH staff in bold</i> )
Nienke Zomerdijk	PhD, School of Medicine, UQ	The psychosocial impact of allogeneic stem cell donation on adult sibling donors	<b>Jane Turner, Geoff Hill</b>
Andrea Henden	PhD – UQ	Interferon in BMT	<b>Geoff Hill, Steven Lane</b>
Rebecca Austin	PhD	Immune responses in AML	<b>Steven Lane, Mark Smyth</b> (QIMR Berghofer)
Therese Vu	PhD	Jak2 V617F driven MPN	<b>Steven Lane, Geoff Hill</b>
Olivia Hollingdrake	Masters Public Health	Haemophilia and age-related comorbidities: Do men with haemophilia consult a General Practitioner for men's health checks?	Lisa Fitzgerald

## Research Fellows

Name	Type of Fellowship	Research Program	University ( <i>years</i> )
Geoff Hill	Qld Health Senior Clinical Research Fellow; NHMRC Australia Fellow; NHMRC Senior Principal Research Fellow; NHMRC Honorary Practitioner Research Fellow, Clinical Director, Qgen Cell Therapeutics Coordinator, Cancer Program, QIMR Berghofer, Laboratory Head, Senior Scientist, QIMR Berghofer	Transplant immunology	2011–2020
Steven Lane	NHMRC Career Development Fellow, Clinical Grade	Preclinical development of novel treatments for patients with blood cancer	2014–2017
Fraser Wright	Clinical Fellowship in Haematology/BMT	Departmental clinical research projects	

## Haematology, Bone Marrow Transplant and Haemophilia *(cont)*

### Current RBWH Led Research Activity

RBWH Lead Researchers	Collaborative Researchers <i>(RBWH staff in bold)</i>	Research Project Title
Geoff Hill, Glen Kennedy	QIMR Berghofer, Royal Melbourne Hospital, Westmead Hospital, St Vincent's Hospital, Royal Perth Hospital	A phase III randomized study of humanized anti-IL-6 receptor antibody Tocilizumab (TCZ) to prevent development of acute graft versus host disease (GVHD) post HLA-matched allogeneic haematopoietic progenitor cell transplantation (HPCT)
Siok Tey, Geoff Hill	QIMR Berghofer	A phase I study of haploidentical haematopoietic stem cell transplantation with gene-modified T cell addback
Nick Weber, Glen Kennedy, Jeffrey Lipman, Jason Roberts, Brett McWhinney, Jacobus Ungerer	UQ	Evaluation of pharmacokinetic and clinical outcomes with standard empiric beta-lactam antibiotic dosing strategies in patients with febrile neutropenia being treated with intensive chemotherapy for haematological malignancies, including assessment of alterations in renal clearance in the setting of sepsis
Midori Nakagaki, Michael Barras, Cameron Curley, Glen Kennedy		A randomised trial of olanzapine and palonosetron versus infused ondansetron for the treatment of chemotherapy-induced nausea and vomiting (CINV) in patients undergoing haematopoietic stem cell transplantation (HSCT)
Sarah Andersen, Nick Weber, Merrilyn Banks, Glen Kennedy	Geoff Hill, QIMR Berghofer	A randomised controlled comparison of enteral versus parenteral nutritional support post allogeneic haematopoietic cell transplantation
Geoff Hill, Glen Kennedy		A phase I/II study of pegylated-Interferon-2alpha for relapsed haematological malignancy after allogeneic haematopoietic progenitor cell transplantation (HPCT)
Geoff Hill	QIMR Berghofer	Observational study of IL-17-related cytokines in stem cell transplantation
Geoff Hill, Siok Tey, Glen Kennedy	QIMR Berghofer	Observational study of immune reconstitution following stem cell transplantation
Geoff Hill, Siok Tey	QIMR Berghofer	Developing a method to generate regulatory T cells from healthy donors
Emma Taylor, Kirk Morris Glen Kennedy		Institutional review of FLT3-ITD+ AML : the role of FLT3 allelic ratio and allogeneic transplantation
Heshani Mediwake, Kirk Morris, Glen Kennedy		Evaluation of the use of brentuximab vedotin as bridge to stem cell transplantation for patients with relapsed / refractory CD30+ Hodgkin lymphoma and anaplastic large cell lymphoma
Ashleigh Scott, Kirk Morris, Glen Kennedy	Anthony Mills, PAH	Treatment of aplastic anaemia with lower dose anti-thymocyte globulin (ATGAM) produces similar response rates and survival as per standard dose ATGAM schedules
Mimi Yue, Joel Collins, Elango Subramoniapillai, Kirk Morris, Glen Kennedy		Use of oseltamivir in managing a nosocomial outbreak of influenza A in a haematology and allogeneic stem cell transplant unit
Joel Collins, Cameron Curley, Kirk Morris K, Glen Kennedy		Hodgkin lymphoma: outcome of a total lymphoid irradiation, cyclophosphamide and etoposide based autologous stem cell transplant regimen in primary refractory/early relapsed disease

## Haematology, Bone Marrow Transplant and Haemophilia (cont)

### Other Current Collaborative Research Activity

Collaborative Lead Researchers	RBWH Researchers	Research Project Title
Andrew Wei (The Alfred Hospital, Melbourne)	Glen Kennedy	Australasian Leukaemia and Lymphoma Group National Blood Cancer Registry
Andrew Wei (The Alfred Hospital, Melbourne)	Glen Kennedy	Sorafenib in Combination with Intensive Chemotherapy for Previously Untreated Adult FLT3-ITD Positive AML: A Phase 2 Randomised Double-Blind Placebo Controlled Multi-Centre Study
Simon Fleming (The Alfred Hospital, Melbourne)	Glen Kennedy	Clinical relevance of partial response in the marrow (PRm) after failure of induction chemotherapy for adults with acute myeloid leukemia (AML)
Ashish Bajel (Royal Melbourne Hospital)	Glen Kennedy	Outcomes of allogeneic stem cell transplantation for chronic myeloid leukemia in Australia – a national multicentre collaboration
C Chuea (Peter MacCallum Cancer Centre, Melbourne)	Glen Kennedy	Use of high dose methotrexate to prevent CNS relapse of diffuse large B-cell lymphoma
Peter Mollee (PAH)	Kirk Morris	“Real World” review of efficacy and safety of pomalidomide in Australian patients with relapsed refractory myeloma

### Research Awards and Achievements

Recipient	Award	Event
Geoff Hill – Director of Research RBWH	Fellow Australian Academy of Health and Medical Science	
Steven Lane – Clinical Haematologist, RBWH	2015 Mercator Fellow	Otto Von-Guerike University Hospital, Magdeburg, Germany
Steven Lane – Clinical Haematologist, RBWH	Bupa research award, finalist	

# Medical Oncology

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**Dr David Wyld**  
Director  
Medical Oncology

The Cancer Care Services Medical Oncology (MO) Department, as well as providing clinical services to the Metro North HHS district, acts as a major tertiary referral centre in Queensland. It has an ongoing, active clinical research program, which continues to expand and develop each year. The unit's research program has a number of different components, each of which has progressed in 2015, only a few of which I can highlight in this summary

Firstly the MO clinical trials unit, which is widely recognized as a service that conducts exceptionally high quality clinical research, is resulting in the unit collaborating in an increasing number of studies in 2015. 18 new studies commenced in 2015, 12 studies were completed and archived, and there were a total of 96 studies active, with 621 patients managed on a clinical trial protocol in 2015. That the unit could undertake this number of clinical trials, and conduct them at such a high standard, is directly related to the quality of the staff involved at all levels, particularly the clinical trials research staff and the Medical Oncologists involved. Many of these trials offer our patients access to new therapies not otherwise available, and all help advance knowledge to help improve outcomes for patients in the future.

Dr Elizabeth Ahern, who completed her Medical oncology training in the department at RBWH in 2014, commenced her PhD at QIMR Berghofer in 2015, under the supervision of Dr Mark Smyth and Dr Michele Teng. Her research focuses on the rapidly expanding field of immunotherapy in solid organ malignancies, and has helped enhance links between the MO unit at RBWH and QIMR Berghofer, particularly in the field of Immunology in cancer.

The final results of a major RBWH based project, led by Dr Matthew Burge, assessing the utility of FDG PET scanning in the preoperative staging of potentially operable pancreatic cancer, was published in 2015. Not only did the study provide clear evidence for the benefit to patients of performing such imaging, but it demonstrated the ability of RBWH researchers in a variety of different departments to undertake a significant collaborative research project together. The prospective study was led by the Medical Oncology research unit, in close collaboration with the Hepatobiliary Surgical Unit and the Nuclear Medicine Department.

In addition, in 2015 the unit has, in collaboration with sociology colleagues at the University of NSW, led by Professor Alex Broom, developed a new qualitative research program within our Service. Projects to date include a study aiming to provide a better understanding of and assist in improving social support amongst women with cancer, an ongoing study investigating the changing landscapes of survivorship in cancer patients- a sociological study of cancer, and a separate qualitative study of neuroendocrine patients' experiences of living with rare tumours. In November Dr Zarnie Lwin and Dr David Wyld represented RBWH as invited speakers at a UNSW conference – Cancer and Palliative Care: Suffering, Hope, Survivorship.

Even just these few examples show the ongoing expansion of the CCS Medical Oncology department's research work, and demonstrate the potential for further future expansion of the unit's research efforts with new partners, both within the Herston precinct and beyond.

## Medical Oncology (cont)

### Supervised Post-graduate Research Students

Name	Current Studies University <i>duration</i> )	Research Project Title	Supervisors ( <i>RBWH staff in bold</i> )
Elizabeth Ahern	PhD UQ (2015–)	Targeting RANK/RANKL in combination immunotherapy using murine and translational models of melanoma, prostate and other solid organ malignancies	Mark Smyth, Michele Teng, <b>David Wyld</b>
Teresa Brown	PhD UQ	A randomised comparison of early prophylactic feeding via gastrostomy versus standard care in high risk patients with head and neck cancer	<b>Brett Hughes, Merrilyn Banks</b> , Judy Bauer

### Current RBWH Led Research Activity

RBWH Lead Researchers	Collaborative Researchers ( <i>RBWH staff in bold</i> )	Research Project Title
Brett Hughes	<b>Rahul Ladwa, Wen Xu, Zarnie Lwin, Alexander Ritchie, Karin Steinke, Sandro Porceddu, Daniel Thani</b>	Adherence to follow up of solitary pulmonary nodules in newly diagnosed head and neck malignancies treated with curative intent
David Wyld	<b>Matte Burge, Zarnie Lwin</b> , Alex Broom (UQ), <b>Stephanie Plage</b> , Emma Kirby (UQ), <b>Helen McDade, Annette Cubitt</b> ,	NET: Cancer on the margins: <i>A qualitative study of neuroendocrine patients' experiences of living with rare tumours</i>
Zarnie Lwin	<b>David Wyld, Annette Cubitt</b> , Alex Broom (UQ), Emily Stephens (UQ), Emma Kirby (UQ), Jon Adams (Univ. Sydney)	Understanding and improving social support amongst women with cancer: a qualitative study
Zarnie Lwin	<b>David Wyld, Stefanie Plage</b> , Katherine Kenny (Univ. NSW), Alex Broom (UQ) Emma Kirby (UQ)	The changing landscapes of survivorship: A sociological study of cancer
Matt Burge	<b>Melissa Eastgate, Jeffrey Goh, Alison Hadley, Kathleen Houston, Amit Sharma, David Wyld</b>	TRACC (Biogrid): Study of Clinical Outcomes and Analysis of Bevacizumab use in Metastatic Colorectal Cancer
Matt Burge	<b>Barbara Leggett, Vicki Whithall, David Wyld, Melissa Eastgate, Zarnie Lwin, Jeffrey Goh, Alison Hadley, Brett Hughes, Po-Ling Inglis</b> , Sudhakar Reddy (Rockhampton) Vemula, Bahran Forouzesh (Rockhampton)	The Royal Brisbane and Women's Hospital and TPCB metastatic Colorectal Cancer database: <i>A prospective observational cohort study examining clinical and molecular biomarkers</i>
Teresa Brown	<b>Brett Hughes, Merrilyn Banks, Elizabeth Kenny, Charles Lin</b>	PEG Study — A randomized comparison of early prophylactic feeding via gastrostomy versus standard care in high risk patients with head and neck cancer
Michelle Nottage	<b>Alessandra Francesconi, Kathleen Houston, Brett Hughes, Lizbeth Kenny, Charles Lin</b>	CRUST — A prospective study investigating the impact of the definitive chemoradiation in locally and/or regionally advanced squamous cell carcinoma of the skin
Raymond Chan	<b>Sarah Northfield, Emily Larsen</b> , Gabor Mihala, Amanda Ullman, <b>Nicole Marsh, Peter Hancock, David Wyld, Anthony Allworth</b> , Nahid Choudhury, Claire Rickard	The effectiveness of dressing and securement devices for peripherally inserted central catheters in an acute care setting: a pilot multi-arm randomised controlled trial. (the CASCADE Trial)
Elise Button	<b>Gillian Nasato, David Wyld, Patsy Yates, Eileen Fennelly, Danielle Johanson, Jenni Leutenegger, Erin Downs, Rae Blades, Jadwiga Chabrowska, Michael Smith, Sarah Northfield, Nicole Gavin, Sally Jones</b>	RBWH Cancer Care Services model of care: working to reduce avoidable emergency presentations and hospitalisations
Raymond Chan	<b>Patsy Yates</b> , Jane Turner (UQ), <b>Brett Hughes</b>	Development and evaluation of a tailored fatigue self-management behavioural intervention for patients with advanced cancer
Nicole Gavin	<b>Gillian Nasato, Nicole Marsh, Emily Larsen, Sarah Northfield, Glen Kennedy, David Wyld, Michael Smith, Krispin Hajkowicz, Trent Atkinson, Barbara Hewer, Fiona Coyer, Alison Alexander, Patsy Yates</b> , Peter Mollee	Central Venous Access Device Registry
Sue Patterson	<b>Raymond Chan, David Wyld</b>	Optimising recruitment into Randomised controlled trials in Mental health and cancer care
Ben Chua	<b>Po Inglis, Zarnie Lwin, Lindy Jeffree</b>	Retrospective analysis of FDG-PET in glioma

## Medical Oncology (cont)

### Other Current Collaborative Research Activity

Collaborative Lead Researchers	RBWH Researchers	Research Project Title
Rachel Neale (QIMR Berghofer)	David Wyld	Describing patterns of care in pancreatic cancer – <i>A population-based study</i>
Jane Turner (UQ)	Patsy Yates, Liz Kenny, Brett Hughes, Raymond Chan	Improving quality of life in high-risk cancer populations: a randomised trial of a structured intervention for head and neck cancer survivors
Jane Turner (UQ)	Brett Hughes	Enhances Study: <i>Enhancing Head And Neck Cancer Patient's Experiences of Survivorship</i>
Debra Anderson (QUT)	Patsy Yates, Raymond Chan, Jeffrey Goh, Po-Ling Inglis	Younger women's wellness after cancer program
Esther Sim (PAH)	Jeff Goh, Philip Chan, Lee Tripcony	Multi-institutional retrospective analysis of high-intermediate and high-risk endometrial cancer treated with chemo-radiotherapy versus radiotherapy alone





# Radiation Oncology

It has been a productive year for cancer research in Radiation Oncology at RBWH.

The Radiation Oncology Department provides radiotherapy services for patients from a wide geographic area. In addition to patients from Metro North, we service outreach clinics at Rockhampton, Longreach, Hervey Bay, TPCB, Redcliffe and Caboolture Hospitals. Although several rural centres have now opened radiotherapy departments, we continue to provide tertiary care for patients in these areas and at Lady Cilento Children's hospital. Our philosophy includes collaborative research and high quality assurance standards via investigator initiated projects.

The installation of modern radiotherapy technology has provided a platform for physics research, and many investigator initiated projects have been developed. Our brachytherapy service has been expanded to include paediatric patients.

Our therapy team have implemented patient education and radiation oncology information using electronic tablets. In 2015 we saw the introduction of new radiation treatment techniques including IMRT and VMAT that spare critical normal tissues and deliver high doses of radiation treatment. These require high level process planning and quality assurance activities.

We are proud to be able to collaborate widely with local, national and international organisations. These include QUT, Princess Alexandra Hospital (PAH) and Mater Radiation Oncology Centre (Metro South), Genesis Cancer Care Queensland, Chris O'Brien Lifehouse, William Buckland Radiation Oncology (Alfred Hospital), RMIT University and University of Sydney.

We are grateful for our donors including the Cancer Council of Queensland who continue to make funds available to support our work. We are particularly proud of our success in highly competitive National Health and Medical Research Council (NHMRC) grants.

## Supervised Post-graduate Research Students

Name	Current Studies University (duration)	Research Project Title	Supervisors (RBWH staff in bold)
Andre Asena	PhD, QUT (2013–2016)	Dose distributions in the vicinity of high-density materials in radiotherapy	<b>Scott Crowe</b> , Tanya Kairn, Jamie Trapp
Diana Binny	PhD, QUT (2015–2021)	Optimizing patient plan deliveries by characterizing treatment planning systems in radiotherapy	<b>Scott Crowe</b> , Tanya Kairn, Jamie Trapp
Orrie Dancewicz	PhD, QUT (2014–2018)	Development and verification of a novel 3D dosimetry technique for tomotherapy	<b>Scott Crowe</b> , Tim Markwell, Jamie Trapp
Craig Lancaster	Masters, QUT (2015)	Clinical implementation of a gel dosimetry system	<b>Steven Sylvander</b>
Timothy Liu	MPhil	Oral Squamous Cell Carcinoma with intermediate risk factors	<b>Ben Chua</b>
Samuel Peet	Masters, QUT (2015–2016)	Estimating dose to cardiac pacemakers and cardioverter-defibrillators in radiation oncology patients	<b>Phil Back, Scott Crowe</b> , Tanya Kairn, <b>Rachael Wilks</b>
Benjamin Perrett	Masters, QUT (2015)	3D printing of air slab caps for correction free small field diode measurements	Paul Charles, <b>Scott Crowe</b> , Tim Markwell
Zac Pross	Masters, QUT (2015–2016)	Monte Carlo simulation of radiological properties of Fricotan moulding material for brachytherapy	<b>Scott Crowe, Craig Lancaster, Sanna Nilsson</b>
Johnny Morales	PhD, QUT (2011–2017)	Independent Monte Carlo analysis for stereotactic radiosurgery treatments	<b>Scott Crowe</b> , Jamie Trapp
Shaun Smith	PhD, QUT (2013–2016)	Development of three-dimensional dosimetry for radiotherapy	<b>Scott Crowe</b> , Kye-Simeon Masters, Jamie Trapp
Patrick Stevenson	Masters, QUT (2015)	Measuring small field output factors	<b>Diana Binny, Scott Crowe, Steven Sylvander</b>

## Radiation Oncology (cont)

### Current RBWH Led Research Activity

RBWH Lead Researchers	Collaborative Researchers (RBWH staff in bold)	Research Project Title
Roger Allison	<b>Robin Mortimer, Donald McLeod</b>	Multidisciplinary thyroid cancer clinic. 6 <sup>th</sup> Multidisciplinary update on thyroid and parathyroid surgery
Phil Back, Craig Lancaster, Zoë Moutrie, Sanna Nilsson	Zac Pross (QUT)	Developing an applicator for gynaecological brachytherapy treatments
Catherine Bettington	<b>Michelle Grogan</b>	A single arm prospective study of the effect of preoperative chemoradiotherapy on sexual dysfunction in men with locally advanced rectal cancer
Jemma Blyth, Kurt Burrows, Martin Seng		Development of the digital information package for the Head and Neck Patient Education: IPAD patient information kiosk – <i>Bridging patient education through visual applications</i>
Jemma Blyth, Ben Chua, Julie-Anne Outhwaite, Diane Ost, Lee Heseltine, Daniel Bryant	<b>Greg Rattray, Nick Golusin, Steve Sylvander, Rob McDowall, Craig Lancaster, Philip Chan, Gary Pratt, Catherine Bettington, Graeme Dickie</b>	Implementation of SABR lung @ CCS RBWH
Jemma Blyth, Anthony Pagidas, Alice Grigg, Adrian Celati, Kim Pidcock, Jemma Devereaux	<b>Allison Dry</b>	Development and implementation of DIBH (Deep Inspiration Breath Hold) @ CCS RBWH
Jemma Blyth, Joshua Runham	<b>Kurt Burrows, Martin Seng</b>	Radiation Oncology Information Patient Education: <i>Utilising iPads for patient information and communication</i>
Jemma Blyth, Christopher Walsh, Michelle Grogan	<b>Christopher Ahern</b>	Dosimetric impact caused by change in breast patient contour during Radiation Therapy
Philip Chan	<b>Paul Thomas, Graeme Dickie, Gary Pratt, Robyn Cheuk, Aravind Ravi Kumar, Jye Smith, Stephen Taylor</b>	Prognostic Value of Assessing Hypoxia in Tumours Using 18FMISO PET During a Course of Radiation Therapy – Proof of Concept Study
Ben Chua	<b>Hon Trinh, Laura Moroney, Jane Crombie</b> , Elizabeth Ward (UQ), <b>Lee Tripcony, Kevina Choma, Graeme Dickie</b>	Retrospective analysis of survival and swallowing outcomes in hypopharyngeal cancer treated with IMRT
Ben Chua	Po Inglis, Zarnie Lwin, Lindy Jeffree	Retrospective analysis of FDG-PET in glioma
Scott Crowe	Tanya Kairn (Genesis Cancer Care)	Women in the medical physics workforce
Scott Crowe, Sanna Nilsson, Steven Sylvander	Tim Markwell (Mater Centre), Tanya Kairn (Genesis Cancer Care), Benjamin Perrett (PAH), Ben Harris (PAH)	Women in the medical physics workforce
Scott Crowe, Rachael Wilks, Steven Sylvander	Venkata Seshadri (PAH), Tanya Kairn (Genesis Cancer Care), Bess Sutherland (Genesis Cancer Care)	Investigation of relationship between radiotherapy treatment complexity and accurate delivery
Jemma Devereaux	<b>Jemma Blyth</b> , Elena Blyth (UQ), Cathy Hargrave (Mater), <b>Jacqui Keller, Raymond Chan</b> , Radiation Oncologist TBD	DIBH-BEST (Deep Inspiration Breath Hold Breath-hold Endurance Spirometer Trial)
Graeme Dickie	Jonathon Askew, <b>Lee Tripcony, Tuan Ha</b>	Stage 1 glottic cancer treated with radiotherapy
Graeme Dickie, Paul Thomas	<b>Olivia Bennett, Lesli Kudge</b>	PSMA PET – Impact of PSMA PET on radiotherapy planning in high risk prostate cancer
Yovanna Durga	<b>Selina Harris, Shayne Etherton</b>	Tomotherapy Head and Neck Adaptive Radiotherapy Study

## Radiation Oncology (cont)

### Current RBWH Led Research Activity (cont)

RBWH Lead Researchers	Collaborative Researchers (RBWH staff in bold)	Research Project Title
Shayne Etherton Selina Harris	<b>Yovanna Durga, Greg Rattray,</b> Cathy Hargrave (Mater)	Tomotherapy Planned Head and Neck Adaptive Study
Chloe Hoffman	<b>Allison Dry</b>	RION: Radiation Induced Optic Neuropathy
Chloe Hoffman	<b>Allison Dry</b>	The use of HDR Brachytherapy in a Paediatric Peri-Anal Rhabdomyosarcoma
Adam Husak	<b>Allison Dry</b>	Respiratory Monitoring and control in the thorax: what is out there?
Lindy Jeffree Michael Fay	Jennifer Martin (University of Newcastle), <b>Alan Coulthard,</b> <b>Paul Thomas,</b> Stephen Rose (CSIRO)	Evaluation of the role of valproate in the treatment of high grade glioma
Marika Lathouras	<b>Greg Rattray, Selina Harris</b>	Shaped Breast and Chest Wall Treatments on Tomotherapy
Laura Moroney	<b>Ben Chua</b>	Swallowing outcomes for parotid and skin cancer patients
Laura Moroney, Jane Crombie	<b>Ben Chua</b>	Swallowing outcomes of patients treated with helical IMRT compared to 3DCRT
Julie-Anne Outhwaite, Brianna McCoola, Marika Lathouras		An Evaluation of the Radiation Oncology Paediatric Group and the Standard of Care provided during Radiation Therapy: Does the RBWH Cancer Care Services provide appropriate care for Paediatric patients in preparation for Radiation Therapy?
Julie-Anne Outhwaite, Debra Vincent		PDR Brachytherapy (Pulse Dose Rate) Recoding in Mosaiq (incl prescription treatment and summary)
Luke Smith		Comparison of techniques limiting treated rectal volumes during external beam radiotherapy for prostate cancer: a feasibility study of Hydrogel in reducing incidence and severity of rectal toxicities
Kate Stewart	<b>Greg Rattray</b>	Five years of Tomotherapy at Royal Brisbane: <i>A review</i>
Kate Stewart, Lizbeth Kenny, Greg Rattray	<b>Rob McDowall, Vicky Lightfoot,</b> <b>Craig Lancaster</b>	MIM- Medical Imaging Information system – <i>Implementation of Deformable Registration</i>
Steven Sylvander	<b>Rob McDowall, Vicky Lightfoot,</b> <b>Craig Lancaster</b>	Comparison of image quality for radiochromic and radiographic film. Engineering and Physical Sciences in Medicine
Steven Sylvander	<b>Craig Lancaster, Scott Crowe</b>	Initial results from testing TruView radiochromic gel. Engineering and Physical Sciences in Medicine

### Other Current Collaborative Research Activity

Collaborative Lead Researchers	RBWH Researchers	Research Project Title
Elizabeth Brown (PAH)	Selina Harris	Multi-centre Study of Potential Triggers that identify the need for Adaptive Radiotherapy for Head and Neck Patients: Tomotherapy and VMAT
Elizabeth Brown (PAH), Sandro Porceddu (PAH)	Charles Lin	Predicting the need for adaptive radiotherapy in head and neck cancer
Paul Christie (University of Newcastle)	Philip Chan	OPAL A randomised controlled trial of online versus telephone-based information and support: Can electronic platforms deliver effective care for lung cancer patients?
Samuel Douthwaite (CGUH hospital)	Ben Chua	Primary trans-oral surgical management of early tonsillar squamous cell carcinoma followed by risk-adapted radiotherapy
Gerald Fogarty (St Vincent's Hospital)	Roger Allison	WBRT – ANZMTG 01/07 TROG 08.05 Whole Brain Radiotherapy following local treatment of intracranial metastases of melanoma – <i>A randomised phase III trial</i>
Soumya Ghose (CSIRO), Jason Dowling	Philip Chan	A review of segmentation and deformable registration methods applied to adaptive cervical cancer radiation therapy treatment planning

## Radiation Oncology (cont)

### Other Current Collaborative Research Activity (cont)

Collaborative Lead Researchers	RBWH Researchers	Research Project Title
Esther Sim (PAH)	Jeff Goh, Philip Chan, Lee Tripcony	Multi-institutional retrospective analysis of high-intermediate and high-risk endometrial cancer treated with chemo-radiotherapy versus radiotherapy alone
Kumar Gogna (RO Services – Mater Centre)	Catherine Bettington	A single arm, prospective Phase II study of Split-Course Pelvic Radiotherapy for Locally Progressive, Castrate Resistant Prostate Cancer
Peter Gorayski (ROC), Michael Poulsen (RO Services – Mater Centre)	Lee Tripcony	Chemotherapy compliance in high-risk Merkel cell carcinoma treated with chemoradiotherapy
Peter Graham (St George Hospital)	Robyn Cheuk	STARS - TROG 08.06 A randomised comparison of anastrozole commenced before and continued during adjuvant radiotherapy for breast cancer versus anastrozole and subsequent anti-oestrogen therapy delayed until after radiotherapy
Tanya Kairn (Genesis Cancer Care), Paul Charles (PAH), Johnny Morales (Chris O'Brien Lifehouse), Jamie Trapp (QUT)	Scott Crowe	Small field radiotherapy dose measurements
Pearly Khaw (PMCC)	Robyn Cheuk	TROG 08.04 ANZGOG PORTEC-3 STUDY - A Randomised phase III trial comparing concurrent chemoradiation and adjuvant chemotherapy with pelvic radiation alone in high risk and advanced stage endometrial carcinoma
David Lamb (Wellington Hospital, New Zealand)	Lizbeth Kenny	TROG 03.04 – A Randomised Trial Investigating the Effect on Biochemical (PSA) Control and Survival of Different Durations of Adjuvant Androgen Deprivation in Association with Definitive Radiation Treatment for Localised Carcinoma of the Prostate (RADAR)
Margot Lehman (PAH)	Philip Chan	P LUNG - TROG 11.03 A randomised phase III trial of High Dose Palliative Radiotherapy (HDPRT) versus concurrent Chemotherapy HDPRT (C-HDPRT) in patients with good performance status, locally advanced / small volume metastatic NSCLC not suitable for radical chemo-radiotherapy
Karen Lim (Liverpool Hospital)	Philip Chan	Developing methods to allow adaptive radiotherapy for gynaecological cancers with MRI (cervix)
Michael MacManus (PMCC)	Gary Pratt	TROG 05.02 A prospective single arm trial of involved field radiotherapy alone for stage I-II low grade non-gastric marginal zone lymphoma
Sandro Porceddu (PAH)	Lizbeth Kenny	TROG 14.03 (1219-ROG-HNCG) A blind randomized multicenter study of accelerated fractionated chemo-radiotherapy with or without the hypoxic cell radiosensitizer nimorazole (Nimoral), using a 15 gene signature for hypoxia in the treatment of squamous cell carcinoma of the head and neck
Michael Poulsen (RO Services – Mater Centre)	Graeme Dickie	MP3 – TROG 09.03 A Phase II Efficacy Study of Chemo-radiotherapy in PET Stage II and III Merkel Cell Carcinoma of the Skin TARGET 38/50
Nirmala Pandeya (QIMR Berghofer)	Roger Allison	Increasing thyroid cancer incidence in Queensland, Australia 1982 – 2008
Chamindie Punyaderra (QUT)	Lizbeth Kenny, Graeme Dickie, Benjamin Chua, Charles Lin	A simple saliva test to diagnose head and neck cancer at an early stage – <i>head and neck cancer detection is a spitting distance away (TARGET 20)</i>
Danny Rischin (PMCC)	Lizbeth Kenny	TROG 12.01 A randomised trial of Weekly Cetuximab And Radiation Versus Weekly Cisplatin and Radiation in Good Prognosis Locoregionally Advanced HPV-Associated Oropharyngeal Squamous Cell Carcinoma (TARGET 200)
Gail Ryan (PMCC)	Roger Allison	TROG 06.01 Primary chemotherapy with Temozolomide vs. Radiotherapy in patients with Low Grade Gliomas after stratification for genetic 1P loss: <i>A phase III Study</i>
Penny Schofield (PMCC)	Robyn Cheuk	PeNTAGOn Peer and Nurse support Trial to Assist women in Gynaecological Oncology

## Radiation Oncology *(cont)*

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

RBWH Lead Researchers	Collaborative Researchers <i>(RBWH staff in bold)</i>	Research Project Title
Esther Sim (PAH)	Jeff Goh, Philip Chan, Lee Tripcony	Multi-institutional retrospective analysis of high-intermediate and high-risk endometrial cancer treated with chemo-radiotherapy versus radiotherapy alone
Jamie Trapp (QUT), Andre Asena (QUT), Shaun Smith (QUT), Tanya Kairn (Genesis Cancer Care)	Scott Crowe, Craig Lancaster	Gel dosimetry in radiation therapy
Shalini Vinod (Liverpool Hospital)	Philip Chan	Dosimetric Consequences of Uncertainties in High-Risk CTV (HR CTV) Delineation for Cervical Cancer Brachytherapy
Scott Williams (PMCC)	Philip Chan	ENZARAD: Randomised phase 3 trial of enzalutamide in androgen deprivation therapy with radiation therapy for high risk, clinically localised, prostate cancer

### Research Awards and Achievements

Recipient	Award	Event
Collaboration including Scott Crowe	Highest impact paper funded by Wesley Medical Research in 2015	Wesley Medical Research Annual Achievements Function, 24 <sup>th</sup> February 2016
Lizbeth Kenny	Adjunct Professor	School of medicine, UQ
The Bob Fitchew Award	ACPSEM-Q	Award named after Robert Fitchew – Physics achievements



## Cancer Nursing Professorial Precinct

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The nursing team comprises of 257 nursing staff, providing quality nursing care across the Departments of Clinical Haematology and Bone Marrow Transplantation, Medical Oncology and Radiation Oncology, and the Queensland Haemophilia Centre. The growing demand for cancer care has presented a challenge for the nursing profession in its workload, workforce issues, and most importantly the need to provide innovative and cost-effective cancer care. Cancer nurses play an important and unique role in responding to the needs of people affected by cancer throughout the continuum of care, from prevention to survivorship, end-of-life care and bereavement. The cancer nursing research team was established in 2008 to provide an infrastructure for research and innovation and to ensure that our nursing care is world-class. In 2013, the Cancer Nursing Professorial Precinct was established, which is a strategic initiative of Cancer Care Services, RBWH and the School of Nursing, QUT. Through our strong collaboration with QUT and other research partners, the Precinct seeks to further improve outcomes for people affected by cancer through high quality clinical research and the delivery of evidence-based nursing care.

Cancer nurses at the RBWH are involved in research in a range of areas including intravenous access devices, prevention of blood stream infections, management of treatment induced short- and long- term toxicities, survivorship care and palliative care. The team is involved in national and international supportive cancer care research including a number of NHMRC funded projects. Cancer Care Services has a strong culture of nurses pursuing post-graduate study and research higher degree, enabling excellence in delivery of nursing care. Each research project is patient-centred and seeks to improve the care of patients in clinical practice. The impact of the team can be demonstrated by the number of publications in prestigious multidisciplinary and nursing journals such as the European Journal of Cancer, Endocrine-related Cancer, Cochrane Database of Systematic Reviews, Cancer Nursing and International Journal of Nursing Studies.

During the year, several nurses commenced research higher degree courses and were awarded competitive scholarships. Other highlights include the commencement of quality improvement projects driven by the needs of the service line, such as the Central Venous Access Device (CVAD) Registry project and the Department of Emergency Medicine (DEM) Avoidance project. In addition, a randomised controlled trial (RCT), testing the feasibility of four dressing and securement methods to prevent peripherally inserted central catheter (PICC) failure (*entitled Central venous catheter Securement And Dressing Evaluation: The CASCADE Trial*) was completed, which has informed a full scale NHMRC-funded RCT (*entitled Peripherally Inserted Central catheter dressing and Securement: the PISCES Trial*). Another highlight is the international collaborations between RBWH cancer nurses and researchers from Memorial Sloan Kettering Cancer Center, USA and National University of Singapore, Singapore. These collaborations continue to enable the team to undertake cutting-edge research in the area of supportive cancer care.



## Cancer Nursing Professorial Precinct (cont)

### Supervised Post-Graduate Research Students

Name	Current Studies University (duration)	Research Project Title	Supervisors (RBWH staff in bold)
Elise Button	PhD	Identifying clinical indicators that signal a person with a haematological malignancy is at risk of deteriorating and dying	<b>Patsy Yates, Raymond Chan,</b> Shirley Chambers, <b>Jason Butler</b>
Alison Bowers	PhD	Models of care and care needs for Queensland Children Hospice	<b>Patsy Yates, Raymond Chan</b>
Sarah Northfield	Master of Applied Science (Research)	Identifying factors that influence specialist palliative care referrals for hospitalised patients with advanced cancer	<b>Patsy Yates, Raymond Chan,</b> John Rosenberg
Jenni Leutenegger	Master of Applied Science (Research)	Training models of teleoncology in nursing	<b>Patsy Yates, Raymond Chan</b>
Nicole Gavin	PhD	The safety of parenteral nutrition regarding microbial growth and vascular catheter-related infection (The FACT Study)	<b>Claire Rickard,</b> David MacMillan, <b>Samantha Keogh</b>
Julie Flynn	PhD	Decontamination of central venous catheter needleless connectors	<b>Claire Rickard, Samantha Keogh,</b> Li Zhang
Emily Larsen	Grad Dip of Health Research	N/A	<b>Samantha Keogh, Claire Rickard</b>

### Research Fellows

Name	Type of Fellowship	Research Program	University (years)
Raymond Chan	NHMRC Health Professional Research Fellowship	Development and evaluation of a tailored fatigue self-management behavioural intervention for patients with advanced cancer	QUT (2014-2017)

### Current RBWH Led Research Activity

RBWH Lead Researchers	Collaborative Researchers (RBWH staff in bold)	Research Project Title
Elise Button	<b>Gillian Nasato, David Wyld, Patsy Yates, Eileen Fennelly, Danielle Johanson, Jenni Leutenegger, Erin Downs, Rae Blades, Jadwiga Chabrowska, Michael Smith, Sarah Northfield, Nicole Gavin, Sally Jones</b>	RBWH Cancer Care Services model of care: working to reduce avoidable emergency presentations and hospitalisations
Elise Button	<b>Patsy Yates, Raymond Chan,</b> Shirley Connell, <b>Jason Butler</b>	Clinical indicators that identify risk of deteriorating and dying in people with a haematological malignancy
Raymond Chan	<b>Patsy Yates,</b> Jane Turner, <b>Brett Hughes</b>	Development and evaluation of a tailored fatigue self-management behavioural intervention for patients with advanced cancer
Raymond Chan	Alexandra McCarthy, Jackie Davinesh, Karen Sullivan, Alexandre Chan	Systematic review of pharmacological and non-pharmacological interventions to manage cognitive alterations after chemotherapy for breast cancer
Raymond Chan	<b>Sarah Northfield, Emily Larsen,</b> Gabor Mihala, Amanda Ullman, <b>Nicole Marsh, Peter Hancock, David Wyld, Anthony Allworth,</b> Nahid Choudhury, Claire Rickard	The effectiveness of dressing and securement devices for peripherally inserted central catheters in an acute care setting: a pilot multi-arm randomised controlled trial. (the CASCADE Trial)
Sue Patterson	<b>Raymond Chan, David Wyld</b>	Optimising recruitment to randomised controlled trials in mental health and cancer care: comparative case studies

## Cancer Nursing Professorial Precinct *(cont)*

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

RBWH Lead Researchers	Collaborative Researchers <i>(RBWH staff in bold)</i>	Research Project Title
Nicole Gavin	<b>Gillian Nasato, Nicole Marsh, Emily Larsen, Sarah Northfield, Glen Kennedy, David Wyld, Michale Smith, Krispin Hajkovicz, Trent Atkinson, Barbara Hewer, Fiona Coyer, Alison Alexander, Patsy Yates,</b> Peter Mollee	Central Venous Access Device Registry
Nicole Gavin	<b>Claire Rickard,</b> David MacMillan, <b>Samantha Keogh</b>	The safety of parenteral nutrition regarding microbial growth and vascular catheter-related infection (The FACT Study)
Julie Flynn	<b>Claire Rickard, Samantha Keogh,</b> Li Zhang	Decontamination of central venous catheter needleless connectors.
Sarah Northfield	<b>Patsy Yates, Raymond Chan,</b> John Rosenberg	Identifying factors that influence specialist palliative care referrals for hospitalised patients with advanced cancer
Jenni Leutenegger	<b>Patsy Yates, Raymond Chan</b>	Training models of teleoncology in nursing

### Other Current Collaborative Research Activity

Collaborative Lead Researchers	RBWH Researchers	Research Project Title
Jane Turner (UQ)	Patsy Yates, Liz Kenny, Brett Hughes, Raymond Chan	Improving quality of life in high-risk cancer populations: a randomised trial of a structured intervention for head and neck cancer survivors
Debra Anderson (QUT)	Patsy Yates, Raymond Chan, Geoff Goh, Po Inglis	Younger women's wellness after cancer program
Nahid Choudhury (Griffith University)	Raymond Chan, Nicole Gavin	Emergence of Chlorhexidine Tolerance in Bacteria associated with Catheter Related Infections.
Kaye Petherick, Judith McLean, Lowanna Dunn, Deborah Anderson, Cynthia Cliff, Marisha McAuliffe (QUT)	Alison Alexander, Gillian Nasato, Michael Smith, Ian Drake, Jodie Stewart, Glen Kennedy	Cancer Care Information Portal for Cancer Patients in Brisbane's Metro North Area

### Research Awards and Achievements

Recipient	Award	Event
Julie Flynn	Early Career Researcher 2015	Australasian College for Infection Prevention and Control
Nicole Gavin	Winner, Three Minutes of Fame 2015	RBWH Healthcare Symposium
Nicole Gavin	Best abstract	HAA Annual Scientific Meeting 2015
Nicole Gavin	Finalist, Three Minute Thesis	Griffith University Health Group Three Minute Thesis 2015