

# 2016

# RBWH

## Research Report

## Women's &

## Newborn

## Services



# Women's and Newborn Services

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**Tami Photinos**  
A/Executive Director  
Women's and Newborn Services

Women's and Newborn Services (WNS) offer a wide and diverse range of healthcare services to women and their babies across Queensland and beyond. We are dedicated to quality multidisciplinary healthcare which is evident in our commitment to expanding research within the service line.

WNS continues to maintain an active interest in research activities as well as the provision of multiple education programs for undergraduate and postgraduate health service professionals. To that end we maintain a strong connection with local universities including the University of Queensland, Queensland University of Technology, James Cook University and Central Queensland University and the Royal Australian and New Zealand College of Obstetrics and Gynaecology (RANZCOG). Queensland Centre for Gynaecological Cancer (QCGC) has continued research activities in 2016 to help improve patient outcomes by researching the most effective treatment for women with gynaecological cancers. QCGC has recently released its 30 Year Outcome Report which is the first of its kind in Australia.

The Perinatal Research Centre's (PRC) multidisciplinary research team, consisting of clinicians, scientists, allied health professionals and engineers, aims to discover and translate research advances into clinical practice and better health outcomes for mothers and babies. Research within the PRC covers several areas and have received multiple grants in 2016 to improve these outcomes.

The Grantley Stable Neonatal Unit (GSNU) continues to have an interest in a varying number of research opportunities and looks to further enhance collaborations between universities and internal departments that were developed in 2016. GSNU's close collaboration with the Perinatal Research Centre continues to translate research into clinical practice.

Obstetric Medicine continues to add to the research program with a focus on women with complex pregnancies and improving the outcomes for both mother and infant. With the recent transfer of Obstetric Medicine to WNS we hope to further build this research portfolio to continue to improve these outcomes.

The Department of Obstetrics and Gynaecology continues to increase its activity and provides tertiary and quaternary obstetrics and gynaecology services for Metro North Hospital and Health Service and Queensland. Both departments and its subdivisions are involved in multidisciplinary research to ensure the care of the women we treat and management of their care is contemporary and evidenced based. Significant research contributions continued in 2016 by the Maternal Fetal Medicine Unit, Statewide Paediatric and Adolescent Gynaecology Services, Urogynaecology, Reproductive Endocrinology and Infertility divisions of Women's and Newborn Services.

## Perinatal Research Centre

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The Perinatal Research Centre (PRC), directed by Professor Paul Colditz, is committed to improving health for mothers and babies through world class biomedical and clinical research. Our multidisciplinary research team, consisting of clinicians, scientists, allied health professionals and engineers, aims to discover and translate research advances into clinical practice and better health outcomes for mothers and babies. Research within the PRC covers several related areas including neonatal brain injury and neuroprotection led by Dr Tracey Bjorkman, systems physiology led by Dr Barbara Lingwood and Dr Yvonne Eiby, signal processing led by Prof Boualem Boashash as well as clinical trials involving the Royal Brisbane and Women's Hospital.

With the support of our national and international collaborators we achieved much towards our goals in 2016. Congratulations to Dr Barbara Lingwood for her successful NHMRC grant application to commence in 2017. This study will examine whether early blood transfusion is more effective than saline to improve cerebral oxygen delivery in very preterm neonates. We are also pleased to report the award in 2016 of a \$2.5 million NHMRC Centre for Research Excellence grant for the Australasian cerebral palsy clinical trials network. This grant along with \$1.5 million from Advance QLD Innovation Partnerships Program in 2016 encompasses a collaborative network of clinicians and researchers throughout Queensland and Australia to optimise interventions and advance services for children with cerebral palsy.

Professor Paul Colditz continues to lead a \$1.65 million NHMRC grant over 5 years to predict neurodevelopmental disability in babies born very preterm. By identifying structural and functional brain connectivity features earlier and more accurately than currently possible in the preterm brain, this research will enable better prediction of longer-term motor and neurodevelopmental function. This will lay the groundwork for new interventions to prevent or effectively treat brain injury.

Dr Tracey Bjorkman continues her NHMRC project to evaluate a novel therapy for neonatal seizures. The growth of the neonatal brain injury team has led to a number of significant publications in 2016 and strengthened our capacity in newborn neuroprotection research. The Lion's Medical Research Foundation's generous support of Dr Tracey Bjorkman has allowed her to undertake and advance this vital research and to continue to attract significant additional funding.

The Prem Baby Triple P Parenting Study is almost complete. This project, funded by NHMRC and led by Prof Colditz, will determine whether this parenting intervention improves outcomes for preterm babies and their families. Other ongoing clinical trials which utilise state-of-the-art methods and techniques include predicting motor outcomes in preterm babies using MRI, establishing the effects of massage in very preterm babies, optimising adaptation of the cardiovascular system to extrauterine life in the very preterm baby, and determining the effects of different feeding regimens on development in preterm babies. The Harcourts RBWHF Butterfly Ball, held at the Hilton, was a great success and enjoyed by many. Prof Paul Colditz and Dr Tracey Bjorkman recently led tours of the nursery and labour ward at the RBWH with the Lion's Medical Research Foundation Personality Quest entrants. We would like to thank RBWH Foundation, Harcourts Foundation, Lions Medical Research Foundation and so many members of the public for their generous support which is vital to improving outcomes for mothers and babies through research.



## Supervised Post-graduate Research Students

Name (RBWH staff in bold)	Current Studies (e.g. PhD, Masters etc.)University (duration)	Research Project Title	Supervisors (RBWH staff in bold)
MD Abdul Awal	PhD, UQ (2013-2016)	Classification and localization of neonatal EEG abnormalities using time-frequency image processing based neural network and support vector machine	<b>Paul Colditz</b> , Boualem Boashash
Ms Nada Al-Theyab	PhD, UQ (2012-2017)	Preterm infant body composition	Barbara Lingwood, <b>Timothy Donovan</b> , <b>Paul Colditz</b>
Ms Rebecca Caesar	PhD, UQ (2012-2017)	Early predictors for neurodevelopmental outcome and prioritisation of service delivery for at risk premature infants	Roslyn Boyd, <b>Paul Colditz</b>
<b>Mr Matthew Fielder</b>	MPhil, UQ (2014-2017)	Novel therapies for seizures following hypoxic-ischaemic injury in neonates	Stella Tracey Bjorkman, <b>Paul Colditz</b>
Ms Elizabeth Forbes	MPhil, UQ (2013-2017)	Changes in cardiac structure and biochemistry during transition to extra uterine life in preterm and term piglets	Yvonne Eiby, Barbara Lingwood, Karen Moritz
Ms Joanne George	PhD, UQ (2012-2017)	Prediction of motor outcomes based on early brain structure	Roslyn Boyd, <b>Paul Colditz</b> , Stephen Rose
Ms Kate Goasdoue	PhD, UQ (2015-2018)	A novel therapy for neonatal seizures	Stella Tracey Bjorkman, Julie Wixey
Luke Jardine	PhD, UQ (2015-2018)	Development of early predictors of long term neurodevelopmental outcome for preterm infants	<b>Paul Colditz</b> , Mark Davies
Ji Yeon Kim	PhD, UQ (2015-2018)	Understanding how remote application of near infrared light induces neuroprotection	<b>Paul Colditz</b> , Jonathon Stone
Ms Annice Kong	PhD, UQ (2014-2017)	The relationship between brain structure assessed using diffusion MRI and function assessed using dense array EEG of very preterm infants and the ability to predict neurodevelopmental outcomes	<b>Paul Colditz</b> , Simon Finnigan, Roslyn Boyd, Stephen Rose
<b>Dr Melissa Lai</b>	PhD, UQ (2015-2018)	Environmental manipulation of the very preterm infant: Can dense array EEG detect developmental differences at term equivalent age	<b>Paul Colditz</b> , Simon Finnigan, Jurgen Fripp
Norman Ma	MPhil, UQ (2011-2017)	Brain injury severity in a neonatal model of hypoxic ischemia following potential neuroprotective interventions	Stella Tracey Bjorkman, Craig Winter, <b>Paul Colditz</b>
Ms Stephanie Miller	PhD, UQ (2008-2017)	Examining the maturation of the GABA system in the neonatal brain and its role in hypoxic-ischaemic brain injury	Stella Tracey Bjorkman, Peter Noakes
James Morong	MPhil, UQ (2015-2017)	A comparative study of in-hospital maternal mortality ratio (MMR) between the United States of America and Australia	<b>Paul Colditz</b> , Alfred Robichaux
Abirami Ratnasingham	PhD, UQ (2016-2019)	Long term consequences of altered neonatal adiposity	Barbara Lingwood, <b>Timothy Donovan</b> , Marloes Nitert Dekker, Peter Davies
<b>Ms Sonia Sam</b>	PhD, UQ (2011-2017)	Cardiovascular factors associated with poor outcome in preterm infants	Barbara Lingwood, Paul Colditz
Ms Emma Schleiger	PhD, UQ Awarded 2016	Ameliorating functional deficits in neurological conditions via monitoring and targeting brain electrophysiological signals	<b>Simon Finnigan</b> , <b>Andrew Wong</b> , Stephen Read
Ms Nabeel Sheikh	PhD, UQ (2011-2017)	Role of quantitative EEG in diagnosis, prognostication and management of acute stroke	<b>Andrew Wong</b> , <b>Simon Finnigan</b> , Stephen Read
Mr Timothy Sherry	PhD, UQ (2015-2018)	Identification of brain events via electroencephalogram EEG through blind source separation	<b>Paul Colditz</b>

## Research Positions: Coordinators, Fellow, Adjunct and Honorary Positions

Name	Type of Fellowship	Research Program	University Affiliation (years)
Paul Colditz	Professor of Perinatal Medicine	Clinical neonatology, neuroscience, biomedical signal processing	University of Queensland (current)
Tracey Bjorkman	Lions Senior Medical Research Fellow	Hypoxic-ischemic brain injury and seizures in the neonate	University of Queensland (current)
Nigel Barnett	Honorary Senior Fellow	The effects of hypoxia/ischaemia in visual development and disease	University of Queensland (current)
Boualem Boashash	Professor	Time-frequency signal analysis, biomedical signal processing, spectral estimation, signal detection and classification	University of Queensland (current)
Michael Colditz	Honorary Fellow	Clinical neuroscience	University of Queensland (current)
Kirat Chand	Research Officer	Hypoxic-ischaemic brain injury, inflammation and seizures in the neonate	University of Queensland (current)
Therese De Dassel	Honorary Research Fellow	Clinical psychology, psychiatry	University of Queensland (current)
Brendan Dietrich	Senior Research Technician	Improving outcomes for preterm infants	University of Queensland (current)
Shiyong Dong	Associate Professor	Signal processing: applications to the analysis and detection of perinatal asphyxia	University of Queensland (current)
Timothy Donovan	Research Fellow	Improving outcomes for preterm infants particularly in the area of nutrition, growth/ body composition and development. Ongoing research in the use of telemedicine to provide outreach care of sick infants in regional hospitals. Epidemiology of gastroschisis	University of Queensland (current)
Yvonne Eiby	Honorary Professor	The cardiovascular system of preterm infants	University of Queensland (current)
Christine East	Research Nurse	Fetal monitoring	Monash University (current)
Keren Elfverson	Senior Research Fellow	Clinical Trials	University of Queensland (current)
Simon Finnigan	Adjunct Fellow	Brain monitoring techniques to improve outcomes for critically ill patients (e.g. extremely premature babies; stroke patients)	University of Queensland (current)
Katie Foxcroft	Honorary Senior Fellow	Clinical Trial Coordinator	University of Queensland (current)
Janet Hammill	Research Nurse	Collaboration for Alcohol Related Developmental Disorders	University of Queensland (current)
Annelise Kirkham	Postdoctoral Research Fellow	Clinical Trials	University of Queensland (current)
Aven Lee	Senior Lecturer	Molecular biology and protein biology of the brain	University of Queensland (current)
Melissa Lai	Research Nurse	EEG in preterm babies	University of Queensland (current)
Gillian Lack	Senior Research Fellow	Clinical Trials	University of Queensland (current)
Barbara Lingwood	Honorary Fellow	Cardiovascular function in the preterm infant, infant body composition	University of Queensland (current)
Penny Love	Honorary Professor	Preterm massage study	University of Queensland (current)
Eugene Lumbers	Research Nurse	Fetal origins of adult diseases, hypertension, development of control of the circulation, exercise and training, and renal development and function	University of Queensland (current)
Kellie McGrory	Honorary Fellow	Clinical Trials	University of Queensland (current)
Randal Moldrich	Research Nurse	Preterm brain outcomes	University of Queensland (current)
Lisa McKeown	Postdoctoral Research Fellow	Clinical Trials	University of Queensland (current)
Steve Mehrkanoon	Postdoctoral Research Fellow	Signal Processing	University of Queensland (current)
Stephanie Miller	Research Assistant	Hypoxic-ischaemic brain injury and seizures in the neonate	University of Queensland (current)
Kym Morris	Research Assistant	Clinical Trials	University of Queensland (current)
Margo Pritchard	Honorary Senior Fellow	Child health surveillance and intervention	Australian Catholic University (current)

Name	Type of Fellowship	Research Program	University Affiliation (years)
Stephen Rose	Honorary Professor	Development and application of advanced MRI techniques to aid the detection and monitoring of disease processes	University of Queensland (current)
Kylie Smart	Research Nurse	Clinical Trials	University of Queensland (current)
Karen Taylor	Research Nurse	Clinical Trials Group supporting: Enhanced parenting to improve developmental outcomes in preterm infants	University of Queensland (current)
Leanne Winter	Project Coordinator	Prem Baby Triple P	University of Queensland (current)
Julie Wixey	Research Officer	Hypoxic-ischaemic brain injury, intrauterine growth restriction and inflammation in the neonatal brain	University of Queensland (current)

## Current Research Group / Department Led Research Activity

Research Group / Department Lead Researchers	Collaborative Researchers	Research Project Title
Paul Colditz	Julie Wixey, Susan Sullivan, <b>Melissa Lai</b>	Protecting growth restricted newborn brains by reducing inflammation
Paul Colditz	<b>Melissa Lai</b> , Stella T Bjorkman, Kirat Chand	Novel approaches to protecting the newborn brain
Paul Colditz	Barbara Lingwood, Marloes Dekker-Nitert, <b>Tim Donovan</b> , Peter Davies, Chong	Long-term consequences of altered neonatal adiposity
Paul Colditz	Virginia Slaughter	Is excessive fat accumulation in the weeks after preterm birth associated with poor neurodevelopmental outcome?
Katie Foxcroft	Katie Groom	STRIDER (NZAus): A randomised controlled trial of sildenafil therapy in dismal prognosis early-onset intrauterine growth restriction (New Zealand and Australia) (led by the University of Auckland)
Katie Foxcroft	<b>Pieter Koorts</b> , William Tarnow-Mordi	Does lactoferrin improve survival free from morbidity in very low birth weight infants? Lactoferrin Infant Feeding Trial: a randomised controlled trial
Tim Donovan	Barbara Lingwood, <b>Paul Colditz</b>	Optimising brain development through rationally based nutritional interventions in preterm infants
Paul Colditz	Yvonne Eiby, <b>Sonia Sam</b> , Susan Sullivan	Effective volume expansion in preterm neonates: Cardiovascular and Cerebral outcomes
Sonia Sam	Yvonne Eiby, <b>Paul Colditz</b>	Is angiotensin II a better inotrope than dopamine in preterm infants?
Paul Colditz	Roslyn Boyd, Atul Malhotra, Stephen Rose, Boualem Boashash, Michael Ditchfield, Michael Fahey, Kerstin Pannek, Randal Moldrich	Neurodevelopment of the preterm infant
Paul Colditz	Matthew Sanders, Roslyn Boyd, Margo Pritchard, Peter Gray, Michael O'Callaghan, Virginia Slaughter, Koa Whittingham	Enhanced parenting capacity to improve developmental outcomes in preterm infants
Paul Colditz	Barbara Lingwood, Kathryn Buller	BRAIN - Brain Research Advances In Newborns

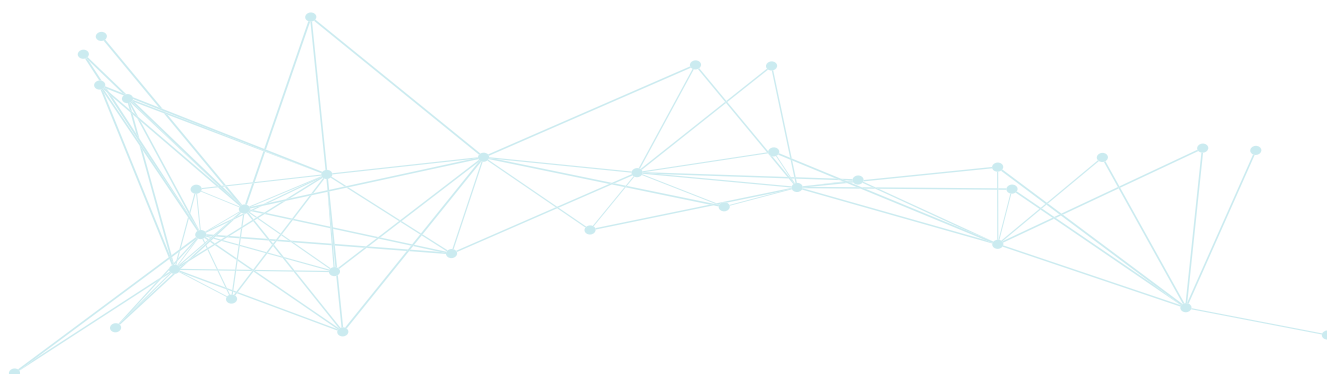
## Collaborative Research Activity

Collaborative Lead Researchers (RBWH staff in bold)	Your Research Group / Department Researchers	Research Project Title
Stella Tracey Bjorkman	Paul Colditz, Samps Vanhatalo	Carbon dioxide as a treatment for seizures in the newborn
Boualem Boashash	Paul Colditz	Automated Neonatal EEG Quality Assessment & Improvement using Artefact Filtering and Signal Segmentation

Collaborative Lead Researchers (RBWH staff in bold)	Your Research Group / Department Researchers	Research Project Title
Boualem Boashash	Paul Colditz	Localization of EEG Abnormalities for Improving Brain Monitoring of Newborn Babies at Risk of Brain Injury using a multichannel time-frequency signal processing approach
Rebecca Pelekanos	Paul Colditz, Nicholas Fisk	Stem cell therapy and neurostimulation repair of white matter injury to prevent cerebral palsy
Roslyn Boyd	Paul Colditz, Joanne George, Stephen Rose	PPREMO: Prediction of preterm early motor and neurodevelopmental outcomes using advanced brain imaging and an early assessment toolbox
Roslyn Boyd	Paul Colditz, Joanne George	PPREMO: Prediction of Preterm Early Motor and neurodevelopmental Outcomes
Rodney Hunt	Paul Colditz, Terrie Inder, Nadia Badawi, Simmer, Helen Liley, Osborn, Cheong, Ian Wright	A study of the impact of treating electrographic seizures in term or near-term infants with neonatal encephalopathy
Roslyn Boyd	Helen Liley, Hurrion, Stephen Rose, Wallace, Paul Dawson, Paul Colditz, Linda Richards, Luke Jardine, Gray, Justo, Corness	Optimising Neonatal Neuroplasticity: research consortium for an MRI compatible incubator at Lady Cilento Childrens Hospital and the Mater Mothers Hospital at the University of Queensland
Roslyn Boyd	Novak, Euan Wallace, Nadia Badawi, Michael Fahey, Stephen Rose, Paul Colditz, Ziviani, Elliott, Stott	Australasian Cerebral Palsy Clinical Trials Network (AusCP-CTN): optimizing interventions and effective services for children with cerebral palsy
Paul Dawson	E Hurrion, Vicki Flenady, Barbara Lingwood, Yvonne Eiby, Paul Colditz, Pieter Koorts, Kumar	Improving health outcomes for preterm infants using a preclinical Pig Translational model (PigTail study)
Andrew Wong	Coulthard, Stephen Read, Simon Finnigan	Continuous Monitoring During Acute Stroke Reperfusion Therapy
Stella Tracey Bjorkman		Seizures and injury in the newborn hypoxic-ischemic brain
Julie Wixey		Biomarkers of inflammation and neuronal injury in the hypoxic-ischemic neonate

## Research Awards and Achievements

Recipient	Award	Event
Abi Ratnasingham	Winner of Best PhD Student Presentation	Queensland Perinatal Consortium (QPcT) Conference 2016: Hot Topics in Perinatal Research
Abi Ratnasingham	Three Minute Thesis (3MT) Competition 2016: Runner-Up	UQ Faculty of Medicine and Biomedical Sciences
Abi Ratnasingham	Three Minute Thesis (3MT) Competition 2016: Winner	UQ Centre for Clinical Research
Randal Moldrich	Academic Excellence, School of Medicine	Griffith University
Tracey Bjorkman	Travel Award	UQ Centre for Clinical Research
Kirat Chand	Travel Award	UQ Centre for Clinical Research
Julie Wixey	Travel Award	UQ Centre for Clinical Research
Annice Kong	Graduate School Travel Grant	UQ Graduate School



## Research Grants – Awarded

Investigators (RBWH staff in bold)	RBWH Research Groups / Departments	Project Title	Granting Body	Amount in 2016	Total Amount (years)
<b>Paul Colditz</b> , Julie Wixey, Susan Sullivan, <b>Melissa Lai</b>	Perinatal Research Centre	Protecting growth restricted newborn brains by reducing inflammation	Royal Brisbane and Women's Hospital Foundation	\$20,000	\$40,000 (2016-2017)
<b>Paul Colditz</b> , <b>Melissa Lai</b> , Stella T Bjorkman, Kirat Chand	Perinatal Research Centre	Novel approaches to protecting the newborn brain	Royal Brisbane and Women's Hospital Foundation	\$20,000	\$40,000 (2016-2017)
<b>Paul Colditz</b> , Barbara Lingwood, Marloes Dekker-Nitert, <b>Tim Donovan</b> , Peter Davies, Chong	Perinatal Research Centre	Long-term consequences of altered neonatal adiposity	Child Health @ UQ Collaborative Workshop Grants	\$4,915	\$4,915 2016
Andrew Wong, Coulthard, Stephen Read, <b>Simon Finnigan</b>	Perinatal Research Centre	Continuous Monitoring During Acute Stroke Reperfusion Therapy	Royal Brisbane and Women's Hospital Foundation	\$60,000	\$60,000 2016
<b>Paul Colditz</b> , Virginia Slaughter	Perinatal Research Centre	Is excessive fat accumulation in the weeks after preterm birth associated with poor neurodevelopmental outcome?	Faculty of Health and Behavioural Sciences and Faculty of Medicine and Biomedical Sciences Research Collaboration Seeding Grants, UQ	\$33,304	\$33,304 2016
Paul Dawson, Hurrion, Vicki Flenady, Barbara Lingwood, Yvonne Eiby, <b>Paul Colditz</b> , <b>Pieter Koorts</b> , Kumar	Perinatal Research Centre	Improving health outcomes for preterm infants using a preclinical Pig Translational model (PigTail study)	Mater Clinical Research Seeding Grant	\$20,000	\$20,000 2016
<b>Paul Colditz</b> , Yvonne Eiby, <b>Sonia Sam</b> , Susan Sullivan	Perinatal Research Centre	Effective volume expansion in preterm neonates: Cardiovascular and Cerebral outcomes	Royal Brisbane and Women's Hospital	\$20,000	\$40,000 (2015-2016)
<b>Sonia Sam</b> , Yvonne Eiby, <b>Paul Colditz</b>	Perinatal Research Centre	Is angiotensin II a better inotrope than dopamine in preterm infants?	Royal Brisbane and Women's Hospital	\$33,430	\$63,430 (2015-2016)
Julie Wixey	Perinatal Research Centre	Biomarkers of inflammation and neuronal injury in the hypoxic-ischemic neonate	The University of Queensland	\$10,000	\$10,000 2016
<b>Paul Colditz</b> , Roslyn Boyd, Atul Malhotra, Stephen Rose, Boualem Boashash, Michael Ditchfield, Michael Fahey, Kerstin Pannek, Randal Moldrich	Perinatal Research Centre	Neurodevelopment of the preterm infant	NHMRC Project Grant	\$329,028	\$1,645,141 (2015-2019)
Stella Tracey Bjorkman, <b>Paul Colditz</b> , Sampsa Vanhatalo	Perinatal Research Centre	Carbon dioxide as a treatment for seizures in the newborn	NHMRC Project Grant	\$238,630	\$850,890 (2015-2017)
Roslyn Boyd, Helen Liley, Elizabeth Hurrion, Stephen Rose, Geoffrey Wallace, Paul Dawson, <b>Paul Colditz</b> , Linda Richards, Luke Jardine, Gray, Robert Justo, Jonathon Corness	Perinatal Research Centre	Optimising Neonatal Neuroplasticity: research consortium for an MRI compatible incubator at LadyCilento Childrens Hospital and the Mater Mothers Hospital at the University of Queensland	UQ Major Equipment and Infrastructure	\$210,000	\$210,000 (2015-2016)



Investigators (RBWH staff in bold)	RBWH Research Groups / Departments	Project Title	Granting Body	Amount in 2016	Total Amount (years)
<b>Katie Foxcroft</b> & Katie Groom	Perinatal Research Centre	STRIDER (NZAus): A randomised controlled trial of sildenafil therapy in dismal prognosis early-onset intrauterine growth restriction (New Zealand and Australia)	University of Auckland	\$6,310	\$6,310 (2015-2017)
<b>Katie Foxcroft, Pieter Koorts,</b> William Tarnow-Mordi	Perinatal Research Centre	Does lactoferrin improve survival free from morbidity in very low birth weight infants? Lactoferrin Infant Feeding Trial: a randomised controlled trial	University of Sydney	\$33,000	\$33,000 (2015-2016)
Boualem Boashash, <b>Paul Colditz</b>	Perinatal Research Centre	Automated Neonatal EEG Quality Assessment & Improvement using Artefact Filtering and Signal Segmentation	Qatar National Research Fund	\$167,500	\$670,000 (2013-2016)
Rebecca Pelekanos, <b>Paul Colditz,</b> Zoe Ireland, Nicholas Fisk, Roslyn Boyd	Perinatal Research Centre	Stem cell therapy and neurostimulation repair of white matter injury to prevent cerebral palsy	Cerebral Palsy Alliance	\$53,166	\$159,500 (2014-2016)
Roslyn Boyd, <b>Paul Colditz,</b> Joanne George	Perinatal Research Centre	PPREMO: Prediction of Preterm Early Motor and neurodevelopmental Outcomes	Financial Markets Foundation for Children	\$50,594	\$151,784 (2014-2016)
<b>Paul Colditz,</b> Matthew Sanders, Roslyn Boyd, Margo Pritchard, Peter Gray, Michael O'Callaghan, Virginia Slaughter, Koa Whittingham	Perinatal Research Centre	A randomised controlled trial of enhanced parenting capacity to improve developmental outcomes in preterm infants	NHMRC Project Grant	\$199,267	\$996,335 (2012-2016)
Stella Tracey Bjorkman	Perinatal Research Centre	Lions Senior Medical Research Fellowship: Seizures and injury in the newborn hypoxic-ischemic brain	Senior Medical Research Fellowship	\$142,333	\$996,335.25 (2011-2018)
<b>Paul Colditz,</b> Barbara Lingwood, Kathryn Buller	Perinatal Research Centre	Brain Research Advances in Newborns (The BRAIN Project)	Royal Brisbane & Women's Hospital Research Foundation	\$115,714	\$810,000.00 (2009-2018)



## 2016 Research Publications

Type (Journal article / Book / Book chapter / Letter)	Publication information
Journal article	Awal MA, Lai MM, Azemi G, Boashash B, Colditz PB. EEG background features that predict outcome in term neonates with hypoxic ischaemic encephalopathy: A structured review. <i>Clin Neurophysiol.</i> 2016;127(1):285-96
Journal article	Caesar R, Boyd RN, Colditz P, Cioni G, Ware RS, Salthouse K, et al. Early prediction of typical outcome and mild developmental delay for prioritisation of service delivery for very preterm and very low birthweight infants: a study protocol. <i>BMJ open.</i> 2016;6(7):e010726.
Journal article	Chand KK, Lee KM, Lavidis NA, Noakes PG. Loss of laminin- $\alpha$ 4 results in pre- and postsynaptic modifications at the neuromuscular junction. <i>Faseb J.</i> 2016.
Journal article	Chand KK, Lee KM, Lavidis NA, Rodriguez-Valle M, Ijaz H, Koebach J, et al. Tick holocyclotoxins trigger host paralysis by presynaptic inhibition. <i>Sci Rep.</i> 2016;6:29446.
Journal article	Eiby YA, Shrimpton NY, Wright IM, Lumbers ER, Colditz PB, Duncombe GJ, et al. Inotropes do not increase cardiac output or cerebral blood flow in preterm piglets. <i>Pediatr Res.</i> 2016;80(6):870-9.
Journal article	Evans T, Boyd R, Colditz P, Sanders M, Whittingham K. Baby triple P for parents of a very preterm infant: a case study. <i>Journal of Child and Family Studies.</i> 2016.
Journal article	Evans T, Boyd R, Colditz P, Sanders M, Whittingham K. Mother-very preterm infant relationship quality: RCT of baby triple P <i>Journal of Child and Family Studies</i> 2016.
Journal article	Feng Y, Yang Y, Huang X, Mehrkanoon S, Suykens JA. Robust Support Vector Machines for Classification with Nonconvex and Smooth Losses. <i>Neural Comput.</i> 2016;28(6):1217-47.
Journal article	Finnigan S, Wong A, Read S. Defining abnormal slow EEG activity in acute ischaemic stroke: Delta/alpha ratio as an optimal QEEG index. <i>Clin Neurophysiol.</i> 2016;127(2):1452-9.
Journal article	Goasdoue K, Awabdy D, Bjorkman ST, Miller S. Standard loading controls are not reliable for Western blot quantification across brain development or in pathological conditions. <i>Electrophoresis.</i> 2016;37(4):630-4.
Journal article	Goasdoue K, Miller SM, Colditz PB, Bjorkman ST. Review: The blood-brain barrier; protecting the developing fetal brain. <i>Placenta.</i> 2016.
Journal article	Johnston T, Sekar R, Endo T, Moffitt T, Peterson L, Nestor I, et al. Has the Prevalence of Neural Tube Defects Decreased in Babies Born to Indigenous Mothers in Queensland? . <i>Australian &amp; New Zealand Journal of Obstetrics &amp; Gynaecology</i> 2016;56:36.
Journal article	Lai MM, D'Acunto G, Guzzetta A, Boyd RN, Rose SE, Frupp J, et al. PREMM: preterm early massage by the mother: protocol of a randomised controlled trial of massage therapy in very preterm infants. <i>BMC Pediatr.</i> 2016;16(1):146.
Journal article	Lee A, Stevens MG, Anderson AR, Kwan A, Balcar VJ, Pow DV. A novel splice variant of the Excitatory Amino Acid Transporter 5: Cloning, immunolocalization and functional characterization of hEAAT5v in human retina. <i>Neurochem Int.</i> 2016.
Journal article	Lewindon PJ, Balouch F, Pereira TN, Puertolas-Lopez MV, Noble C, Wixey JA, et al. Transient liver elastography in unselected control children: Impact of age and intercurrent illness. <i>J Paediatr Child Health.</i> 2016;52(6):637-42.
Journal article	McIntyre HD, Sacks DA, Barbour LA, Feig DS, Catalano PM, Damm P, et al. Issues With the Diagnosis and Classification of Hyperglycemia in Early Pregnancy. <i>Diabetes Care.</i> 2016;39(1):53-4.
Journal article	Mehrkanoon S, Boonstra TW, Breakspear M, Hinder M, Summers JJ. Upregulation of cortico-cerebellar functional connectivity after motor learning. <i>Neuroimage.</i> 2016;128:252-63.
Journal article	Miller SM, Sullivan SM, Ireland Z, Chand KK, Colditz PB, Bjorkman ST. Neonatal seizures are associated with redistribution and loss of GABAA $\alpha$ -subunits in the hypoxic-ischaemic pig. <i>J Neurochem.</i> 2016;139(3):471-84.
Journal article	Mostafa SS, Awal MA, Ahmad M, Rashid MA. Voiceless Bangla vowel recognition using sEMG signal. <i>Springerplus.</i> 2016;5(1):1522.
Journal article	Murphy VE, Jensen ME, Mattes J, Hensley MJ, Giles WB, Peek MJ, et al. The Breathing for Life Trial: a randomised controlled trial of fractional exhaled nitric oxide (FENO)-based management of asthma during pregnancy and its impact on perinatal outcomes and infant and childhood respiratory health. <i>BMC Pregnancy Childbirth.</i> 2016;16:111.
Journal article	Schleiger E, Wong A, Read S, Coulthard A, Finnigan S. Improved cerebral pathophysiology immediately following thrombectomy in acute ischaemic stroke: Monitoring via quantitative EEG. <i>Clin Neurophysiol.</i> 2016;127(8):2832-3.
Journal article	Schleiger E, Wong A, Read S, Coulthard A, Finnigan S. Resolution of cerebral pathophysiology immediately following thrombectomy in acute ischaemic stroke: Monitoring via quantitative EEG. <i>Clinical Neurophysiology.</i> 2016;127:2832-33.
Journal article	Tint MT, Ward LC, Soh SE, Aris IM, Chinnadurai A, Saw SM, et al. Estimation of fat-free mass in Asian neonates using bioelectrical impedance analysis. <i>Br J Nutr.</i> 2016;115(6):1033-42.
Journal article	van Wijngaarden JB, Zucca R, Finnigan S, Verschure PF. The Impact of Cortical Lesions on Thalamo-Cortical Network Dynamics after Acute Ischaemic Stroke: A Combined Experimental and Theoretical Study. <i>PLoS Comput Biol.</i> 2016;12(8):e1005048.
Journal article	Wixey JA, Chand KK, Colditz PB, Bjorkman ST. Review: Neuroinflammation in intrauterine growth restriction. <i>Placenta.</i> 2016. Nov 25. pii: S0143-4004(16)30642-7.
Book	Boashash B, (ed.). Time-frequency signal analysis and processing: a comprehensive reference. 2nd ed. Amsterdam, Netherlands: Academic Press, 2016

Type (Journal article / Book / Book chapter / Letter)	Publication information
Book chapter	Bjorkman ST. Origin and Detection of Neonatal Seizures: Animal and Clinical Studies. In: Walker DW, (ed.). Prenatal and Postnatal Determinants of Development. 2016, p. 343–58.
Book chapter	Boashash B, Stevenson NJ, Rankine LJ, Stevenson NJ, Azemi G, Sejdic E, Aviyente S, Akan A, Mert A, Dong S, Omidvarnia A, Zarjam P, O'Toole JM and Colditz PB. Time-frequency methodologies in neurosciences. Time-frequency signal analysis and processing: a comprehensive reference. Second edition ed. Amsterdam, Netherlands: Academic Press, 2016, p. 915–66.

Type (Oral / Poster / Invited)	Presentation information
Poster	Chand KK, Goasdoue K, Miller SM, Colditz PB, Bjorkman ST. Hypoxic ischemic brain injury activates inflammatory and apoptotic pathways in the neonate pig model. Australasian Neuroscience Society, Hobart 2016
Oral	Chand KK, Goasdoue K, Miller SM, Colditz PB, Bjorkman ST. Expression of inflammatory mediators after hypoxic-ischemic brain injury in a neonatal pig model. 30th Annual meeting Fetal and Neonatal Workshop of Australia and New Zealand, Magnetic Island, QLD, Australia 2016
Oral	Chand KK, Goasdoue K, Miller SM, Colditz PB, Bjorkman ST. Expression of inflammatory mediators after HI brain injury in a neonatal pig model, Queensland Perinatal Consortium, Brisbane 2016
Oral	Eiby Y, Bjorkman ST, Wixey JA, Chand KK, Colditz PB and Lingwood B. Pilot trial of early blood transfusions for supporting cardiovascular function and cerebral oxygen delivery in preterm piglets. 30th Annual meeting Fetal and Neonatal Workshop of Australia and New Zealand. Magnetic Island, QLD, Australia 2016.
Poster	Feng Y, Yang Y, Huang X, Mehrkanoon S, Suykens JA: Robust Support Vector Machines for Classification with Nonconvex and Smooth Losses. Neural Comput 2016;28:1217–1247.
Poster	Fielder M, Colditz PB, Bjorkman ST. Carbonic anhydrase VII expression in hypoxic ischaemic encephalopathy. Australasian Neuroscience Society, Hobart 2016
Oral	Goasdoue K, Miller SM, Chand KK, Wixey JA, Colditz PB and Bjorkman ST. Investigation of the impact of seizures on disruption to the blood-brain barrier following neonatal hypoxia-ischaemia. Queensland Perinatal Consortium, Brisbane, Queensland, University of Queensland 2016.
Oral	Goasdoue K, Miller SM, Chand KK, Wixey JA, Colditz PB, Bjorkman ST. A proposed study for investigation of the blood-brain barrier in neonatal seizures and hypoxic ischemic encephalopathy. 30th Annual meeting Fetal and Neonatal Workshop of Australia and New Zealand, Magnetic Island, QLD, Australia 2016
Oral	Kong A, Finnigan S, Ware R, Finn C, George J, Boyd R, Colditz PB. Early EEG indices inform prognostication of cognitive outcomes in very preterm infants. 14th International Child Neurology Congress, Amsterdam, 2016. Developmental Medicine & Child Neurology.
Poster	Kong A, Finnigan S, Ware R, George J, Boyd R, Colditz PB. Early EEG indices inform visual function at term equivalent age in very preterm infants. 25th Annual Royal Brisbane and Women's Hospital Healthcare Symposium, Brisbane 2016.
Poster	Mehrkanoon S, Boonstra TW, Breakspear M, Hinder M, Summers JJ: Upregulation of cortico-cerebellar functional connectivity after motor learning. Neuroimage 2016;128:252–263.
Poster	Miller SM, Colditz PB, Bjorkman ST. Differential expression of GABA <sub>A</sub> receptor $\alpha_1$ , $\alpha_2$ and $\alpha_3$ subunit in subcellular fractions. Australasian Neuroscience Society Hobart 2016
Oral	Miller SM, Sullivan SM, Ireland Z, Chand KK, Colditz PB, Bjorkman ST. Hypoxia-induced neonatal seizures are independently associated with reduced GABA <sub>A</sub> receptor $\alpha_3$ subunit expression. 30th Annual meeting Fetal and Neonatal Workshop of Australia and New Zealand, Magnetic Island, QLD, Australia 2016
Oral	Miller SM, Sullivan SM, Ireland Z, Colditz PB, Bjorkman ST. Hypoxia-induced neonatal seizures are independently associated with reduced GABA <sub>A</sub> $\alpha_3$ subunit expression. Queensland Perinatal Consortium, Brisbane 2016
Oral	Miller SM, Pelly S, Kalanjati VP, Colditz PB, Bjorkman ST. Identification and expression of a unique neonatal variant of the GABA <sub>A</sub> receptor $\alpha_3$ subunit. RBWH Symposium, Brisbane 2016
Poster	Pelly S, Miller SM, Kalanjati VP, Colditz PB, Bjorkman ST. Identification of a unique GABA <sub>A</sub> receptor $\alpha_3$ subunit splice variant. Australasian Neuroscience Society, Hobart 2016
Poster	Wixey JA, Muller C, Chand KK, Sullivan S, Colditz PB and Bjorkman ST. Neuroinflammatory response in the growth restricted neonate. Australasian Neuroscience Society Annual Scientific Meeting. Hobart, TAS, Australia 2016.
Poster	Wixey JA, Muller C, Sullivan S, Colditz PB and Bjorkman ST. Inflammation, microglial and astrocyte response in the intrauterine growth restricted neonatal brain. 25th Annual RBWH Health Care Symposium. Herston, QLD, Australia 2016.

## Other communications and outputs:

Paul Colditz	Butterfly Ball	Committee member and speaker
Paul Colditz	Neonatal nursing lecture, RBWH	Invited speaker
Paul Colditz	World Prematurity Day, RBWH	Invited speaker
Paul Colditz	ABC breakfast news interview – SIDS pledge	Invited interview on National radio
Paul Colditz	Ausmed Midwifery Challenges – CPD Conference	Keynote presentation
Janet Hammill	"FASD and Disability", Dept. of Communities, Disability Service Centre, Caboolture	Invited speaker
Janet Hammill	Forensic Child & Youth Mental Health Services, Southbank, Brisbane	Invited speaker
Janet Hammill	Mater FASD Education Day	Invited speaker
Janet Hammill	AUSMED School Nurse Training, Mercure Hotel, Brisbane,	Invited speaker
Janet Hammill	Synapse AGM, Synapse, Brisbane	Article
Janet Hammill	Close the Prison Gap Conference, Mantra, Kingscliff	Invited speaker
Janet Hammill	Dept of Communities, 80 George St, Brisbane	Invited speaker
Janet Hammill	UQCCR Seminar Series	Oral presentation
Janet Hammill	Chronic Diseases Unit, University of Queensland	Invited speaker
Janet Hammill	WMB Workshop, Carrara Community Centre, Nerang	Invited speaker
Janet Hammill	Lives Lived Well Disability Community Network Team, Mantra, Kingscliff	Invited speaker

Research Group / Department	Publications		Presentations National and International	
	Journal Articles	Books and Chapters	Oral	Poster
<b>Perinatal Research Centre</b>	25	3	24	9



# Obstetrics and Gynaecology Services

The Department of Obstetrics and Gynaecology continues to increase its activity and provides tertiary and quaternary obstetrics and gynaecology services for MNHHS and QLD. The departments are involved in multidisciplinary research to ensure the care of the women we treat and manage is contemporary and evidenced based.

## The multidisciplinary services include:

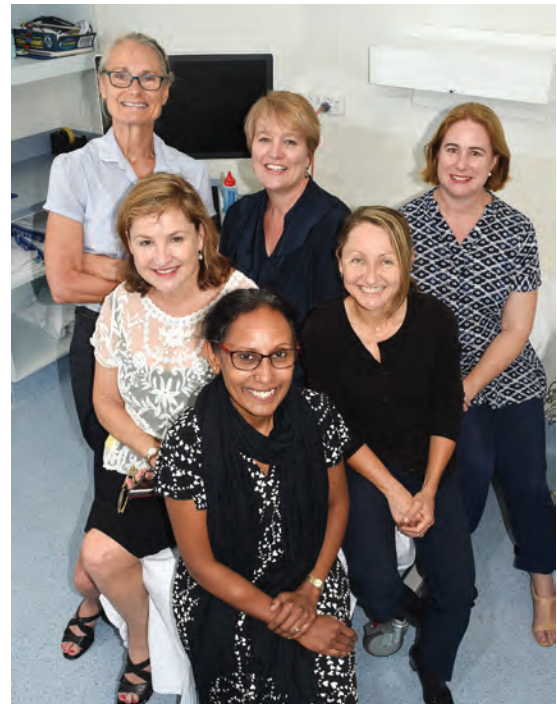
- Birthing Services and Birthing Centre.
- Antenatal Day Assessment Service.
- Obstetric Review Centre.
- Maternity Outpatients Service.
- Endocrine Service.
- Young Parents Program.
- General Practitioner Maternity shared care program.
- Team midwifery models in conjunction with obstetric care.
- Midwifery group practice.
- Eligible Private Practice Midwives.
- Inpatient Unit and Lactation Service.
- Obstetric Medicine Services and Obstetric Telehealth Services.
- Maternal Fetal Medicine and Centre for Advanced Prenatal Care.
- General gynaecology.
- Colposcopy.
- Advanced laparoscopic surgery and endometriosis services.
- Gestational trophoblastic disease.
- Acute and emergency gynaecological care.
- Early pregnancy assessment unit.
- Reproductive Endocrinology and Infertility services.
- Prolapse and incontinence surgery.
- Statewide paediatric and adolescent gynaecology.
- Multidisciplinary BRAC 1 clinic.

Maternity Services collaborate closely with the Perinatal Research Centre and UQCCR for ongoing multi-centre research projects. The Maternal Fetal Medicine unit provides a comprehensive and competitive environment for prospective and retrospective research and audits and undertakes collaborative research with other centres in Australia and New Zealand.

The Statewide Paediatric and Adolescent Gynaecology Service, Directed by Associate Professor Rebecca Kimble has received numerous research grants, both QLD and Commonwealth, are active in research and have presented and published internationally. The service now provides outreach services to the Lady Cilento Children's Hospital.

Associate Professor Chris Maher, Urogynaecologist, has been involved in international multicentre research and Cochrane reviews aimed at researching the most effective treatments for women with urogynaecological issues to improve patient outcomes.

Reproductive endocrinology and infertility is a division of the Department of Gynaecology. Professor Hayden Homer was appointed as the inaugural Christopher Chen Chair in Reproductive Medicine at UQ in 2016 and established Queensland's first Oocyte Biology Research Laboratory situated in the UQCCR. Professor Homer is the director of the lab and his research is funded by 3 NHMRC Grants worth over \$1.7M. A major aspect of his research seeks to better understand the molecular determinants of oocyte quality and to identify pathways that could be amenable to modification for reversing poor oocyte quality. This knowledge will improve the efficiency of IVF with associated reduction in risks and costs to patients. Another major objective of this research is to develop novel and less invasive approaches for female fertility preservation. Increasing cancer survivorship has increased the numbers of reproductively-aged women who survive their disease and are desirous of pregnancy. The research unit is developing agents that can possibly be administered as a simple pill to increase oocyte resilience to chemotoxicity thereby preserving fertility (termed oncofertility).



The Obstetrics and Gynaecology department collaborates with numerous other departments within Metro North Hospital and Health Service (MNHHS) as well as with UQ, UQCCR, Mater Hospital, interstate hospitals and New Zealand.

### Supervised Post-graduate Research Students

Name (RBWH staff in bold)	Current Studies (e.g. PhD, Masters etc.)University (duration)	Research Project Title	Supervisors (RBWH staff in bold)
Goutham Subramanian	PhD, UQ (2016-2019)	The role of single-strand binding proteins in repair of DNA damage and oocyte quality	<b>Hayden Homer</b> , Kum Kum Khanna
Jessica Greaney	PhD, UQ (2017-2020)	The role of Sirtuin 1 in oocyte development and female fertility	<b>Hayden Homer</b> , Carlos Salomon-Gallo
Juvita DeLancy	PhD, UQ (2017-2019)	Sirtuin 3 regulation of oocyte quality in obesity and during ageing	<b>Hayden Homer</b> , Carlos Salomon-Gallo
Mohammed Altaf	PhD, UQ (2017-2019)	The role of Sirtuin 3 in male fertility and spermatogenesis	<b>Hayden Homer</b> , Martin Lavin
Pia Astbury	Honours, UQ (2017-2018)	Oxidative stress in human oocytes	<b>Hayden Homer</b>

### Research Positions: Coordinators, Fellow, Adjunct and Honorary Positions

Name	Type of Position	Research Program	University Affiliation (years)
Hayden Homer	Christopher Chen Chair of Reproductive Medicine	Director of Christopher Chen Oocyte Biology Research Laboratory, UQCCR, Faculty of Medicine	UQ (2016-current)
Rebecca Kimble	Associate Professor	Faculty of Medicine	University of Queensland 2007-current
Rebecca Kimble	Adjunct Associate Professor	Faculty of Health Sciences	Queensland University of Technology
Karin Lust	Associate Professor	Faculty of Medicine	University of Queensland 2014-current

## Current Research Group / Department Led Research Activity

Research Group / Department Lead Researchers	Collaborative Researchers	Research Project Title
Hayden Homer	<b>Hayden Homer (RBWH)</b> Prof Martin Lavin (UQ)	Senataxin-mediated repair of DNA damage during oocyte development
Hayden Homer	<b>Hayden Homer (RBWH)</b> Prof Kum Kum Khanna (QIMR)	Role of single strand binding proteins in DNA repair and oocyte quality
Hayden Homer	<b>Hayden Homer (RBWH)</b> Prof Greg Rice (UQ) Dr Carlos Salomon-Gallo (UQ)	Oocyte- and Embryo-derived exosome signalling
Hayden Homer	<b>Hayden Homer (RBWH)</b> Prof David Sinclair (Harvard University) Dr Lindsay Wu (UNSW)	Role of Sirtuin 2 and NAD in oocyte quality during ageing and chemotherapy
Hayden Homer	<b>Hayden Homer (RBWH)</b> Queensland Fertility Group	Human oocyte quality

## Collaborative Research Activity

Collaborative Lead Researchers (RBWH staff in bold)	Your Research Group / Department Researchers	Research Project Title
Kenneth Beagley (QUT), A/Prof Anusch Yazdani (RBWH)	<b>Hayden Homer (RBWH)</b>	Chlamydia infection and ovarian reserve
Prof Vicki Flenedy, University Auckland Dr Katie Groom)	<b>Dr Yogesh Chadha</b>	My Baby Moves
Prof Michael Beckman	<b>A/ P Rebecca Kimble</b>	PINC trial
University Auckland Dr Katie Groom)	<b>Dr Renuka Sekar</b>	Stridor

## Research Awards and Achievements

Recipient	Award	Event
<b>Amanda Wee, Associate Professor Rebecca Kimble</b>	Session Prize Winner Vaginal Dilatation for vaginal reconstruction in congenital anomalies: Ten Years' Experience at an Australian Quaternary Paediatric and Adolescent Gynaecology Service	Royal College of Obstetricians and Gynaecologists World Congress, Birmingham 20-22 June 2016
Lawrence Josey, <b>Associate Professor Chris Maher</b>	Phillips Medical System Prize	RANZCR Annual Scientific meeting

## Research Grants - Awarded

Investigators (RBWH staff in bold)	RBWH Research Groups / Departments	Project Title	Granting Body	Amount in 2016	Total Amount (years)
<b>Hayden Homer (CIA)</b> David Sinclair (CIB) Lindsay Wu (CIC)	Oocyte Biology Research Lab, UQCCR/Laboratory for Ageing, UNSW	Female reproductive health preservation by Nicotinamide Adenine Dinucleotide (NAD+) and Sirtuin2 (SIRT2)	NHMRC	\$143,661.00	\$410,983.00 (2016-2018)
<b>Hayden Homer (CIA)</b> Robert Gilchrist (CIB) John Carroll (CIC) William Ledger (CID)	Oocyte Biology Research Lab, UQCCR/School of Women's & Children's Health, UNSW/Monash University	A BubR1-centred network for non-invasively measuring human oocyte quality	NHMRC	\$173,538.50	\$515,615.50 (2015-2017)

## 2016 Research Publications

Type (Journal article / Book / Book chapter / Letter)	Publication information (RBWH staff in bold)
Journal article	<b>Homer H</b> , Rice GE, Salomon C. Embryo- and endometrium-derived exosomes and their potential role in assisted reproductive treatments-liquid biopsies for endometrial receptivity. <i>Placenta</i> . 2016 Dec 9. doi: 10.1016/j.placenta.2016.12.011.
Journal Article	Rebecca Kimble, Genevieve Molloy, Bridget Sutton, Partial Cervical Agenesis and Complete Vaginal Atresia. <i>Journal of Pediatric and Adolescent Gynecology</i> 29(2016) e43-e 47
Journal Article	<b>Rebecca MN Kimble</b> , Ying He, Peter Borzi Successful Pregnancy outcome and surgical approach in women with repaired Bladder Extrophy or Cloacal Extrophy- Experience from a quaternary paediatric and adolescent gynaecology centre in Australia. <i>Journal of Pediatrics and Congenital Disorders</i> 1: 1-5
Journal Article	Mowat A, <b>Maher C</b> , Ballard E. Surgical outcomes for low-volume vs high-volume surgeons in gynecology surgery: a systematic review and meta-analysis. <i>American journal of obstetrics and gynecology</i> . 2016;215(1):21-33
Journal Article	Haylen BT, <b>Maher CF</b> , Barber MD, Camargo S, Dandolu V, Digesu A, et al. An International Urogynecological Association (IUGA) / International Continence Society (ICS) Joint Report on the Terminology for Female Pelvic Organ Prolapse (POP). <i>Neurourology and urodynamics</i> . 2016;35(2):137-68.
Journal Article	<b>Maher C</b> , Feiner B, Baessler K, Christmann-Schmid C, Haya N, Marjoribanks J. Transvaginal mesh or grafts compared with native tissue repair for vaginal prolapse. <i>The Cochrane database of systematic reviews</i> . 2016;2:CD012079.
Journal Article	Haylen BT, <b>Maher CF</b> , Barber MD, Camargo S, Dandolu V, Digesu A, et al. An International Urogynecological Association (IUGA)/ International Continence Society (ICS) joint report on the terminology for female pelvic organ prolapse (POP). <i>International urogynecology journal</i> . 2016;27(4):655-8
Journal Article	Costantini E, Brubaker L, Cervigni M, Matthews CA, O'Reilly BA, <b>Maher CF</b> . Sacrocolpopexy for pelvic organ prolapse: evidence-based review and recommendations. <i>European journal of obstetrics, gynecology, and reproductive biology</i> . 2016;205:60-5
Journal Article	Christmann-Schmid C, Wierenga AP, Frischknecht E, <b>Maher C</b> . A Prospective Observational Study of the Classification of the Perineum and Evaluation of Perineal Repair at the Time of Posterior Colporrhaphy. <i>Female pelvic medicine &amp; reconstructive surgery</i> . 2016;22(6):453-9.
Journal Article	<b>Maher C</b> , Feiner B, Baessler K, Christmann-Schmid C, Haya N, Brown J. Surgery for women with apical vaginal prolapse. <i>The Cochrane database of systematic reviews</i> . 2016;10:CD012376.
Journal Article	<b>Maher C</b> , Feiner B, Baessler K, Christmann-Schmid C, Haya N, Brown J. Surgery for women with anterior compartment prolapse. <i>Cochrane Database of Systematic Reviews</i> 2016, Issue 11. Art. No.: CD004014. DOI: 10.1002/14651858.CD004014.pub6

## 2016 Conference Presentations – Invited Speaker, Oral and Poster

Type (Oral / Poster / Invited)	Presentation information (RBWH staff in bold)
Oral (Invited)	<b>Homer H</b> . Reversing the age-related decline in oocyte quality. <i>Scientists in Reproductive Technology Annual Conference, Adelaide, April 2016</i>
Oral (Invited)	<b>Homer H</b> . Sirtuin regulation of meiotic maturation in oocytes. <i>Australian Biology of Ageing Conference, Sydney, April 2016</i>
Oral (Invited)	<b>Homer H</b> . Turning back the clock for aged eggs. <i>UQ Global Leadership Series – Frontiers in Fertility, July 2016</i>
Oral (Invited)	<b>Homer H</b> . Determinants of Gamete Quality. <i>Society for Reproductive Biology, Annual Scientific Meeting, Gold Coast, August 2016</i>
Oral (Oozoa Award Finalist)	Loh W.G., Wu, L, Riepsamen, A, Sinclair, D, <b>Homer, H</b> . SIRT2 regulates mammalian female meiosis via APC-independent proteolysis. <i>Society for Reproductive Biology, Annual Scientific Meeting, Gold Coast, August 2016</i>
Oral (Invited)	<b>Kimble R, Wee A</b> . Vaginal Dilatation for vaginal reconstruction in congenital anomalies: Ten Years' Experience at an Australian Quaternary Paediatric and Adolescent Gynaecology Service. <i>Oral Presentation RCOG World Congress Birmingham, United Kingdom, June 2016</i>
Oral (Invited)	<b>Kimble R</b> . 10th International Trauma Conference Hokkaido: Trauma and the pregnant patient- Is it time for a seatbelt campaign. <i>Japan, January 2016</i>
Oral	Tyler J, Lee J, Gray L, Knack B, <b>Kimble R</b> . Lactation Society Conference Australia and New Zealand: Queensland Clinical guidelines: Implementation strategies to support breastfeeding initiation. <i>Melbourne, October 2016</i>
Oral	Lee J, Knack B, Gray L, Sutherns S, <b>Koorts P</b> , Dawson, <b>Kimble R</b> . Perinatal Society of Australia and New Zealand 20 <sup>th</sup> Annual Congress: Perinatal care at the threshold of viability-An opinion survey in Queensland. <i>Townsville, May 2016</i>



Type (Oral / Poster / Invited)	Presentation information (RBWH staff in bold)
Oral	Gray L, Lee J, Knack B, Sutherns S, <b>Koorts P</b> , Dawson, <b>Kimble R</b> . International Normal Labour and Birth Conference: Translation of Normal Labour and Birth Research and Implementation of a Statewide Normal Birth Guideline. Sydney, October 2016
Poster	<b>Kimble R</b> , Molloy G, Sutton B. World Congress of Paediatric and Adolescent Gynaecology: Limitations of MRI in diagnosis of the complex combined condition of Vaginal Agenesis and partial cervical agenesis. Florence, June 2016
Oral (Invited)	<b>Maher C</b> . UGSA: ASM sacral colpopexy tips and tricks. Auckland, March 2016
Oral (Invited)	<b>Maher C</b> . UGSA ASM Cochrane review: contemporary transvaginal mesh. Auckland, March 2016
Oral (Invited)	<b>Maher C</b> . UGSA ASM Surgical management of pelvic organ prolapse. Auckland, March 2016
Oral (Invited)	<b>Maher C</b> . Malaysian Urogynaecology Society Live surgery workshop. Penang, April 2016
Oral (Invited)	<b>Maher C</b> . Malaysian Urogynaecology Society: Surgical management of recurrent anterior wall prolapse. Penang, April 2016
Oral (Invited)	<b>Maher C</b> . Malaysian Urogynaecology Society: Surgical management of apical prolapse. Penang, April 2016
Oral (Invited)	<b>Maher C</b> . International Consultation Incontinence: Surgical management of pelvic organ prolapse. Tokyo, September 2016
Oral (Invited)	<b>Maher C</b> . UGSA mid urethral sling education day Western University. Sydney, August 2016
Oral (Invited)	<b>Maher C</b> . UGSA mid urethral sling education day MERF Brisbane
Oral (Invited)	<b>Maher C</b> . RANZCOG Perth ASM Vascular complications Urogynaecology. Perth, October 2016
Oral (Invited)	<b>Maher C</b> . Continence Foundation Australia ASM Are all tapes the same? Adelaide, November 2016
Oral (Invited)	<b>Maher C</b> . RBWH Urogynaecology twilight Education. November 2016
Oral (Invited)	<b>Maher C</b> . AGES Cadaver education course Anatomy of the retropubic space MERF. Brisbane 2016
Oral (Invited)	Homer H Reversing the age-related decline in oocyte quality: Can we turn back the clock? EVE Health Clinical Update Meeting, Brisbane, March 2016
Oral (Invited)	Homer H Female fertility preservation: Current status and future challenges. RBWH Cancer Care Research Forum, April, 2016
Oral (Invited)	Homer H The effects of ageing on the oocyte. QFG Nurse's Education Day, July, 2016
Oral (Invited)	Hayden H Age-related decline in female fertility: Can we turn back the clock? UQ Pathology Grand Rounds, July, 2016
Oral (Invited)	Hayden H Reversing the age-related decline in oocyte quality: Can we turn back the clock? Monash IVF Meeting, August 2016
Oral (Invited)	Hayden H Infertility. Brisbane Open House, Public Seminars, October 2016
Oral (Invited)	Hayden H Understanding oocyte biology: is it possible to reverse poor oocyte quality? Queensland Scientists in Reproductive Technology Education Meeting, October, 2016
Oral (Invited)	Hayden H Effects of ageing on the oocyte. Queensland Fertility Nurses of Australia Meeting, December 2016

## Other communications and outputs

### Media coverage of research:

Fertility improved, infertility 'reversed' in mice: promising new research. The Sydney Morning Herald. May 2nd 2016.

[www.smh.com.au/nsw/fertility-improved-infertility-reversed-in-mice-promising-new-research-20160501-gojoc.html](http://www.smh.com.au/nsw/fertility-improved-infertility-reversed-in-mice-promising-new-research-20160501-gojoc.html)

## Research Publications / Presentations Summary Table

Research Group / Department	Publications		Presentations National and International	
	Journal Articles	Books and Chapters	Oral	Poster
<b>Obstetrics and Gynaecology</b>	11	0	31	1

## Queensland Centre for Gynaecological Cancer

The Queensland Centre for Gynaecological Cancer (QCGC) is a state-wide service for the management of women with gynaecological cancer. QCGC Research is the research branch of QCGC. The Director of QCGC Research is Professor Andreas Obermair who leads and develops the unit to produce meaningful research outcomes.

QCGC Research's mission is to research and develop the best standard of care for women experiencing gynaecological cancer. This may include finding causes for and preventing gynaecological cancer; and finding better treatment options to cure women affected by gynaecological cancer.

QCGC Research's focus is on conducting surgical clinical trials in the field of gynaecological cancer but we also perform groundbreaking work outside the conventional clinical trials framework.

Our research is funded partly by competitive research grants (NHMRC project grants, smart state research grants, Cancer Australia), by support from individual and corporate donors as well as from fundraising events.

Our research activities help improve patient outcomes by researching the most effective treatment for women with gynaecological cancers.

In 2016 we received funding to complete Long Term Follow-Up of the Laparoscopic Approach to Carcinoma of the Endometrium (LACE) Trial. The LACE Trial evaluated the safety of laparoscopic hysterectomy and included 760 participants. We are now looking at long term quality of life, health and lifestyle following surgical treatment for endometrial cancer. Also in 2016 we continued recruiting for the ECHO Trial which examines the benefits of exercise during chemotherapy for ovarian cancer. This study is a collaboration between the Queensland University of Technology, NHMRC Clinical Trials Centre and QCGC Research. The femMe trial, which allows a large number of women to have effective treatment of their endometrial cancer without the need for major surgery and its implications, expanded in 2016 with further sites beginning recruitment.



## Current Research Group / Department Led Research Activity

Research Group / Department Lead Researchers	Collaborative Researchers	Research Project Title
Prof Andreas Obermair	Monika Janda (QUT) Peta Forder (Uni of Newcastle) <b>Jim Nicklin</b> (Gyn Onc) Lewis Perrin (Mater) Tom Manolitsas (Monash) Yee Leung (KEMH) Russell Hogg (Westmead) Rhonda Farrell (Royal Hosp Women) Martin Oehler (Royal Adelaide Hosp) Peter Sykes (Christchurch) Merran Williams (Bloomhill Cancer Care) Val Gebski (Uni of Sydney)	Long-term follow-up of the Laparoscopic Approach to Carcinoma of the Endometrium (LACE) Trial-survival outcomes.
Prof Andreas Obermair	<b>Jim Nicklin</b> (Gyn Onc) <b>Russell Land</b> (Gyn Onc) <b>Andrea Garrett</b> (Gyn Onc) <b>Amy Tang</b> (Gyn Onc) Lewis Perrin (Mater) Marcelo Nascimento (GCUH) Jonathan Carter (Chris O'Brien) Orla McNally (The Women's) Kym Reid (Monash) Yee Leung (KEMH) Stuart Salfinger (SIOG) Peter Sykes (Christchurch) Cecile Bergzoll (Wellington) Lois Eva (Auckland)	A Phase II Randomised Clinical Trial of Mirena® ± Metformin ± Weight Loss Intervention in Patients with Early Stage Cancer of the Endometrium.
Prof Andreas Obermair Paul Thomas	<b>Jim Nicklin</b> (Gyn Onc) <b>Russell Land</b> (Gyn Onc) <b>Andrea Garrett</b> (Gyn Onc) <b>Amy Tang</b> (Gyn Onc)	Impact of gated PET/CT on the diagnosis of distant metastases of advanced epithelial ovarian, fallopian tube, and primary peritoneal cancer.
Prof Andreas Obermair	Nigel Armfield (UQ) Tetske Heijink (Research Intern) A/Prof Frances Boyle (UQ School of Public Health) Prof Monika Janda (QUT)	LivEs - Exploring women's lived-experiences of ovarian cancer

## Collaborative Research Activity

Collaborative Lead Researchers (RBWH staff in bold)	Your Research Group / Department Researchers	Research Project Title
Sandi Hayes (QUT)	Prof Andreas Obermair (Gyn Onc) Jim Nicklin (Gyn Onc) Russell Land (Gyn Onc) Andrea Garrett (Gyn Onc) Amy Tang (Gyn Onc)	A Phase III randomised controlled trial of exercise during chemotherapy for patients commencing first line treatment for ovarian cancer
Pedro Ramirez (MD Anderson USA)	Prof Andreas Obermair (Gyn Onc) Jim Nicklin (Gyn Onc) Russell Land (Gyn Onc) Andrea Garrett (Gyn Onc)	A Phase III Randomized Clinical Trial Comparing Laparoscopic or Robotic Radical Hysterectomy versus Abdominal Radical Hysterectomy in Patients with Early Stage Cervical Cancer

## Research Grants – Awarded

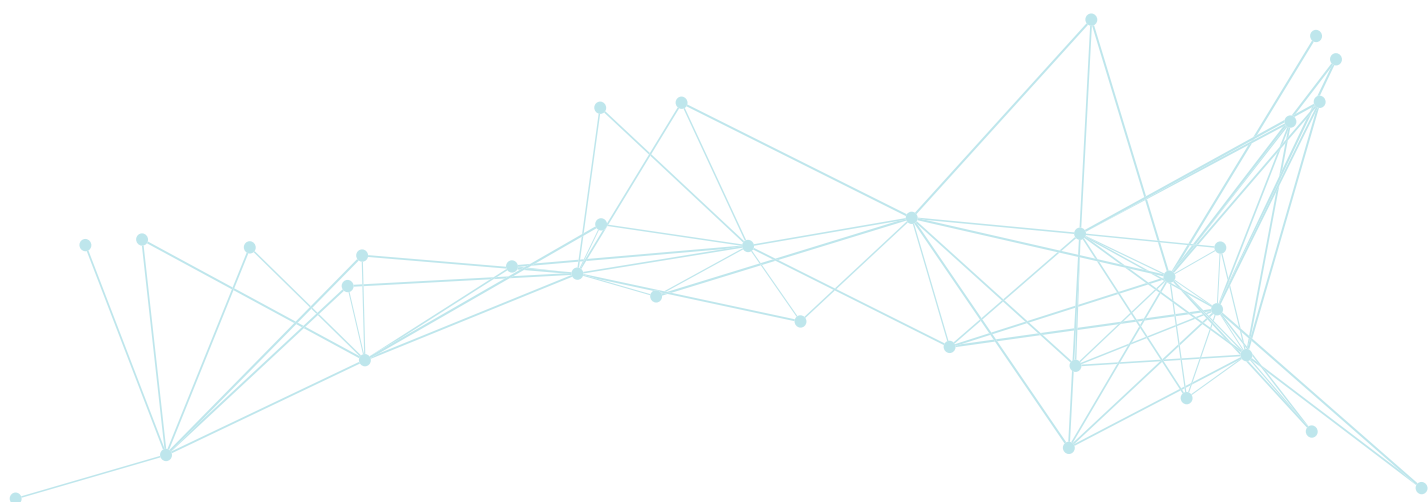
Investigators (RBWH staff in bold)	RBWH Research Groups / Departments	Project Title	Granting Body	Amount in 2016	Total Amount (years)
<b>Obermair A</b> , Quinn M, Brennan D, Armes J, Janda M, GebSKI V, Carter J, Leung Y, Perrin L, Bunting M, Oehler M, <b>Nicklin J</b> , Strakosch C, Williams M	QCGC Research	A phase II randomised clinical trial of Mirena ± metformin ± weight loss intervention in patients with early stage cancer of the endometrium	Cancer Australia	\$220,000	\$540,000 (2015-2018)
<b>Obermair A</b> , Janda M, Forder P, <b>Nicklin J</b> , Perrin L, Manolitsas T, Leung Y, Hogg R, Farrell R, Oehler M, Sykes P, Williams M, GebSKI V.	QCGC Research	Long-term follow-up of the Laparoscopic Approach to Carcinoma of the Endometrium (LACE) Trial-survival outcomes.	Cancer Australia	\$126,891	\$380,674 (2016-2018)

## 2016 Research Publications

Type (Journal article / Book / Book chapter / Letter)	Publication information (RBWH staff in bold)
Journal article	<b>Obermair A</b> , Brennan DJ, Baxter E, Armes JE, GebSKI V, Janda M. Surgical safety and personal costs in morbidly obese, multimorbid patients diagnosed with early-stage endometrial cancer having a hysterectomy. <i>Gynecol Oncol Res Pract.</i> 2016 Feb 9;3:1. eCollection 2016.
Journal article	Obermair H, Janda M, <b>Obermair A</b> . Real-world surgical outcomes of a gelatin-hemostatic matrix in women requiring a hysterectomy: a matched case-control study. <i>Acta Obstet Gynecol Scand.</i> 2016 Sep;95(9):1008-14.. Epub 2016 Jun 10.
Journal article	<b>Obermair A</b> , Youlden D, Baade P, Janda M. Do breast cancer survivors benefit from prophylactic removal of uterus and ovaries? A population-based data linkage replication study. <i>Asia Pac J Clin Oncol.</i> 2017 Feb;13(1):68-78. Epub 2016 May 27.
Journal article	<b>McGrath S</b> ; <b>Nicklin J</b> . Clinicopathological study of ovarian carcinoid tumours. <i>Australian and New Zealand Journal of Obstetrics &amp; Gynaecology</i> Volume: 56 Issue: 5 Pages: 508-513 Published: October 2016

## Research Publications / Presentations Summary Table

Research Group / Department	Publications		Presentations National and International	
	Journal Articles	Books and Chapters	Oral	Poster
QCGC Research	4	0	3	0



## Grantley Stable Neonatal Unit

The Grantley Stable Neonatal Unit (GSNU) continues to have an interest in a varying number of research opportunities. We have an ongoing involvement in neonatal multicentre trials such as Supreme (Neuroprotective role of sulphate among preterm babies), NEST (A Multicentre trial on treatment of Electrographic versus clinical seizures in term newborns) and LIFT (Lactoferrin Infant feeding trial). GSNU closely collaborates with the Perinatal Research Centre to translate animal research into clinical practise.

A collaborative effort between the GSNU, RBWH Milk Bank, University of Queensland and RBWH Pharmacy department resulted in an ongoing body of work on the effect of pasteurisation on vitamin D and trace elements. This work will be expanding in 2017.

Support for our neonatal advanced trainees have resulted in diverse body of work, including work with the RBWH Milk Bank, where we showed an improved patient outcome with the concurrent use of probiotics and pasteurised donor human milk, NeoRESQ (Neonatal Retrieval Emergency Service South East Queensland) and palliative care.

Our staff was involved in a Queensland wide analysis of the antenatal detection, place of birth and outcome for all infants with critical Congenital Heart Disease. Through the QMPQC (Queensland Maternal and Perinatal Quality Council) we have obtained consensus of a more extended antenatal screen which includes standard cardiac outlet views and have provided this information to hospitals as well as presenting at national and state seminars.

Infant Nutrition: We have continued to define the outcomes with current nutrient intakes including innovative insights into the body composition outcomes in very preterm infants particularly finding that at term corrected age lean body mass has a significant deficit and that adiposity (%fat mass) is excessive. During this year we obtained a grant to study the interaction of the growth/body composition in our nursery cohort with the neurocognitive and Metabolic Syndrome risks ie. Risk of early hypertension, coronary/cerebrovascular disease and type 2 diabetes) at 7 years of age.

Cost of Regional Screening for ROP: We completed a study of the economic costs to the health budget of having infants at risk of ROP screened using current methods. This has been used to inform comparisons between other models of regional ROP screening including the use of retinal imaging in regional hospitals and is now being published nationally.

2017 will be an exciting year for the GSNU as the unit sets about collating all the current research into a research group, which will facilitate all current and future research in the unit and will provide assistance to interested staff from all streams.



## Supervised Post-graduate Research Students

Name (RBWH staff in bold)	Current Studies (e.g. PhD, Masters etc.)University (duration)	Research Project Title	Supervisors (RBWH staff in bold)
Fabio Gomes	PhD completed 2016, UQ	Development of an assay for total vitamin D content in milk and application to study the effect of pasteurisation in breast milk	<b>Karen Whitfield, Mark Davies, Pieter Koorts, David Cartwright</b>
Nor Hidayah Mohd Taufek	PhD, University of Queensland	Effect of pasteurisation on trace elements in breast milk	<b>Karen Whitfield, Mark Davies, Pieter Koorts</b>
Donna Franklin	PhD, University of Queensland	The use of high-flow nasal oxygen for bronchiolitis	<b>Mark Davies</b>
Luke Jardine	PhD, University of Queensland	Neonatal general movement detection with accelerometers and prediction of neurodevelopmental outcome.	<b>Mark Davies</b> , Paul Colditz

## Current Research Group / Department Led Research Activity

Research Group / Department Lead Researchers	Collaborative Researchers	Research Project Title
<b>Pieter Koorts</b>	<b>Mark Davies, Katherine White, Garry Inglis, Adam Hoellering</b>	Propofol compared to Morphine and Midazolam for sedation for intubation in infants.
<b>Deborah Gilmour</b>	<b>Mark Davies</b>	NeoStress: Measurement of sound, light and vibrations on neonatal transport
<b>Karen Whitfield</b>	<b>Mark Davies</b>	GRID study (gentamycin regimen infant dosage study)
<b>Didier Tshamala</b>	<b>Mark Davies, Anita Pelecanos</b>	Donor human milk availability and breastfeeding: a retrospective cohort study
<b>Janet Sharpe</b>	<b>Pieter Koorts, Mark Davies, Mandy Way</b>	The availability of probiotics and donor human milk and mortality and morbidity in very preterm infants
<b>Jasmine Antoine</b>	<b>Mark Davies, Garry Inglis</b>	Endotracheal tube aspirate cultures and neonatal chronic lung disease
<b>Didier Tshamala</b>	<b>Mark Davies, Adam Hoellering</b>	The movement of umbilical venous catheters in neonates.

## Collaborative Research Activity

Collaborative Lead Researchers (RBWH staff in bold)	Your Research Group / Department Researchers	Research Project Title
Dr Paul Dawson, Professor Nadia Badawi, Professor Roslyn Boyd, A/Professor Vicki Flenady, Dr Elizabeth Hurrion, Professor Francis Bowling, Dr Pieter Koorts, Professor Sailesh Kumar	<b>Pieter Koorts</b>	Neuroprotective role of sulphate among preterm babies (SuPreme study)
Deanne August	<b>Li-An Collie</b>	Nepira study (Neonatal skin injury and pressure injury risk assessment).
Jeanie Cheong, Peter Dargaville, Rod Hunt, Prof Nadia Badawi, Dr Marilyn Rochefort, A/Prof Zsuzsoka-Kecskes, Helen Liley, Paul Colditz, Karen Simmer, Ian Wright, Andrew McPhee, Terrie Inder	<b>Pieter Koorts</b>	Neonatal Electrographic Seizure Trial (NEST) A Multicentre trial on treatment of Electrographic versus clinical seizures in term newborns
William Tarnow-Mordi, Kei Lui, Roger Soll, Paolo Manzoni, Deborah Schofield	<b>Pieter Koorts</b>	LIFT (Lactoferrin Infant feeding trial)

## Research Grants – Awarded

Investigators (RBWH staff in bold)	RBWH Research Groups / Departments	Project Title	Granting Body	Amount in 2016	Total Amount (years)
Dr Paul Dawson, Professor Nadia Badawi, Professor Roslyn Boyd, A/Professor Vicki Flenady, Dr Elizabeth Hurrion, Professor Francis Bowling, Dr Pieter Koorts, Professor Sailesh Kumar	Neonatology	Neuroprotective role of sulphate among preterm babies (SuPrime study)	NHMRC	\$144,087	\$720,437 (2015-2019)
Associate Professor Tim Donovan, Dr Barbara Lingwood, Professor Paul Colditz	Neonatology, UQ Centre for Clinical Research	Optimising brain development through rationally based nutritional interventions in preterm infants	Royal Brisbane and Women's Hospital		2014-2016

## 2016 Research Publications

Type (Journal article / Book / Book chapter / Letter)	Publication information (RBWH staff in bold)
Journal Article	Mohd-Taufek, Nor, <b>Cartwright, David, Davies, Mark</b> , Hewavitharana, Amitha K., <b>Koorts, Pieter</b> , Shaw, Paul N., Sumner, Ronald, Lee, Eugene and <b>Whitfield, Karen</b> . The simultaneous analysis of eight essential trace elements in human milk by ICP-MS. Food Analytical methods, 2016;9(7):1-8
Journal Article	Mohd-Taufek, Nor, <b>Cartwright, David, Davies, Mark</b> , Hewavitharana, Amitha K., <b>Koorts, Pieter</b> , Shaw, Paul N, <b>Whitfield, Karen</b> . To investigate the effect of the pasteurisation process on trace elements in donor breast milk. Archives of Disease in Childhood. September 2016;101(9):e2.20-e2
Journal Article	Gomes, Fabio, Shaw, Paul N, <b>Whitfield, Karen, Koorts, Pieter</b> , Hewavitharana, Amitha K. Effect of pasteurisation on the concentrations of vitamin d compounds in donor breast milk. Archives of Disease in Childhood 2016 September; 101(9):e2.19-e2
Journal Article	Mohd-Taufek, Nor, <b>Cartwright, David, Davies, Mark</b> , Hewavitharana, Amitha K., <b>Koorts, Pieter</b> , Shaw, Paul N, <b>Whitfield, Karen</b> . The effect of pasteurization on trace elements in donor breast milk. Journal of perinatology June 2016; 36(10)
Journal Article	Gomes, Fabio, Shaw, Paul N, <b>Whitfield, Karen, Koorts, Pieter</b> , Hewavitharana, Amitha K. Effect of pasteurisation on the concentrations of Vitamin D compounds in donor breastmilk. International Journal of Food Sciences and Nutrition January 2016; 67(1):16-19
Journal Article	<b>Deborah Gilmour, Mark W Davies</b> , Anthony R Herbert. Adequacy of palliative care in a single tertiary neonatal unit. Journal of Paediatrics and Child health February 2017; 53(2): 136-144. First published online 4 October 2016.
Book Chapter	Armfield, Nigel R. and <b>Donovan, Tim</b> . Acute care telemedicine. In Halit Eren and John G. Webster (Ed.), Telemedicine and electronic medicine (pp. 597-618)
Book Chapter	<b>Donovan, Tim</b> . Critical Congenital Heart Disease: Birth hospital level and antenatal detection, Qld 2007-2011. Chapter in Maternal and Perinatal Mortality and Morbidity Report 2015. Published Feb 2016
Journal Article	<b>Lai, Melissa M.</b> , D'Acunto, Giulia, Guzzetta, Andrea, Boyd, Roslyn N., Rose, Stephen E., Fripp, Jurgen, Finnigan, Simon, <b>Ngenda, Naoni</b> , Love, Penny, Whittingham, Koa, Pannek, Kerstin, Ware, Robert S. and <b>Colditz, Paul B</b> . PREMM: preterm early massage by the mother: protocol of a randomised controlled trial of massage therapy in very preterm infants. BMC Pediatrics 16(146)
Journal Article	<b>Cartwright, David W</b> . Nasal High-Flow Therapy for Primary Respiratory Support in Preterm Infants. New England Journal of Medicine 2016 September; 375(September 22):12
Journal Article	Flint A, <b>New K, Davies MW</b> . Cup feeding versus other forms of supplemental enteral feeding for newborn infants unable to fully breastfeed Cochrane Database Syst Rev 2016, Issue 8. Art. No.: CD005092. DOI: 10.1002/14651858.CD005092.pub3.

## 2016 Conference Presentations – Invited Speaker, Oral and Poster

Type (Oral / Poster / Invited)	Presentation information (RBWH staff in bold)
Oral, invited	<b>Donovan T</b> , Al Theyab N, Lingwood B, <b>Colditz P</b> . Growth and body composition in extremely preterm infants is altered early. International Conference on Developmental Origins of Adiposity and Long –term Health: The Power of Programming. Munich, Oct 2016
Oral	Johnston T, <b>Sekar R</b> , <b>Donovan T</b> , Colditz P, Moffitt T, Endo T, Petersen L. Has the prevalence of neural tube defects decreased in babies born to indigenous mothers in Qld? RANZCOG Annual Scientific Meeting, Perth, 2016
Oral, Invited	<b>Donovan T</b> , Endo T, Johnson T, <b>Colditz P</b> . Place of birth for cCHD infants in Qld 2007-2011. Qld Maternal and Perinatal Quality Council Seminar. Brisbane, June 2016
Oral	<b>Sharpe J</b> , Way M, <b>Koorts P</b> , <b>Davies, M</b> . The availability of probiotics and donor human milk improves mortality and morbidity in very preterm infants. Oral presentation at the Inaugural International Milk Bank Conference, Brisbane, July 2016
Oral	<b>Karen Whitfield</b> , <b>Pieter Koorts</b> , <b>David Cartwright</b> , <b>Mark Davies</b> . The effect of pasteurisation on vitamin D levels and trace elements in donor milk. Oral presentation at the Inaugural International Milk Bank Conference, Brisbane, July 2016

## 2016 Research Publications / Presentations Summary Table

Research Group / Department	Publications		Presentations National and International	
	Journal Articles	Books and Chapters	Oral	Poster
<b>Neonatology</b>	9	2	5	0





## Department of Obstetric Medicine

Obstetric medicine's research program aims to address the needs of women with complex pregnancies and improve outcomes for mother and infant. We have two NHMRC funded studies running currently: the SPRING study of probiotics to prevent GDM and the Breathing for Life trial of FENO guided treatment for asthma in pregnancy. Related to the SPRING study, we have strong collaborative links with UQ, Mater Health, for both clinical and laboratory microbiome analyses studies. Other current research studies include several examining maternal metabolism: ketones and lipids in women with diabetes in pregnancy, dietetic interventions aimed at addressing maternal weight gain in pregnancy, lactation in women with Type 2 Diabetes, anaesthetic issues in women with obesity complicating pregnancy.

In 2016, we published 16 peer reviewed manuscripts in journals including Diabetes, Diabetes Care, and two book chapters.



### Supervised Post-graduate Research Students

Name (RBWH staff in bold)	Current Studies (e.g. PhD, Masters etc.)University (duration)	Research Project Title	Supervisors (RBWH staff in bold)
<b>Dr Victoria Eley</b>	PhD, UQ, (2015-2017)	Clinical guidelines relating to the anaesthetic management of obese parturients: An evaluation of their clinical utility and supporting evidence	Leonie Callaway,
Luisa Gomez Arango	PhD, UQ 2014-2017	Microbiome in pregnancy	Leonie Callaway, Dr Marloes Dekker Nitert
Dr Kristine Matusiak	MPhil, UQ 2012-2017	Effects of preconception weight loss on the HPA axis	Dr Marloes Dekker Nitert, Leonie Callaway
<b>Dr Helen Robinson</b>	PhD, UQ (2014-)	Carbohydrate Restriction in the Management of Gestational Diabetes	Leonie Callaway, Helen Barrett, Marloes Dekker Nitert
<b>Dr Fiona Britten</b>	PhD, UQ (2014 -)	Breastfeeding in women with Type 2 diabetes	Emma Duncan, Leonie Callaway
<b>Angela North</b>	Masters, UQ (2016-)	Therapeutic heparin antenatal and peripartum	Karin Lust, Karen Whitfield, Helen Barrett
William Carrey-Foster	BSc (Hons), UQ 2016, First Class	Prevalence of antibiotic resistance genes in the gut microbiome of pregnant women	Helen Barrett, Marloes Dekker Nitert

## Research Positions: Coordinators, Fellow, Adjunct and Honorary Positions

Research Group / Department Lead Researchers	Collaborative Researchers	Research Project Title
Obstetric Medicine/ Rheumatology	Katherine Poulsen (TPCH), Claire Barrett (Redcliffe), Laurel Young (Redcliffe), <b>Helen Barrett</b>	Pregnancies exposed to biologics (PEB) study
Obstetric Medicine/ID/Dietetics	<b>Callaway LK</b> , Dekker Nitert M, <b>Patterson D</b> , <b>Barett HL</b> , <b>de Jersey S</b>	Is the resistome in the gut microbiome in pregnant women changing pregnancy outcomes?
Obstetric Medicine/Dietetics	Robinson H, <b>Barrett HL</b> , Dekker Nitert M, <b>Callaway L</b> , <b>de Jersey S</b>	Assessing ketone production after a meal with restricted carbohydrate in women with gestational diabetes mellitus
Obstetric Medicine/ Endocrinology/Dietetics	<b>Barrett HL</b> , Dekker Nitert M, <b>Callaway L</b> , McIntyre HD, <b>D'Emden M</b> , <b>de Jersey S</b>	Postprandial triglycerides in diabetes in pregnancy: A pilot study

## Collaborative Research Activity

Research Group / Department Lead Researchers	Collaborative Researchers	Research Project Title
Murphy V, Gibson P, Hensley M, Mattes J, Giles W, Peek M, Bisits A, McCaffery K	<b>L Callaway</b> , <b>P Colditz</b> , <b>H Barrett</b>	Breathing for Life Trial

## Research Grants – Awarded

Investigators (RBWH staff in bold)	RBWH Research Groups / Departments	Project Title	Granting Body	Amount in 2016	Total Amount (years)
Murphy V, Gibson P, Hensley M, Mattes J, Giles W, Peek M, Bisits A, <b>Callaway L</b> , McCaffery K, <b>Barrett H</b>	Obstetric Medicine	The Breathing for Life Trial (BLT): A randomized trial of fractional exhaled nitric oxide based management of asthma during pregnancy and its impact on perinatal outcomes and infant and childhood respiratory health.	NHMRC APP 1060983	\$329,581	2014-2018.. \$1,647,906.
<b>Callaway LK</b> , Dekker Nitert M, <b>Patterson D</b> , <b>Barett HL</b> , <b>de Jersey S</b>	Obstetric Medicine/ID/Dietetics	Is the resistome in the gut microbiome in pregnant women changing pregnancy outcomes?	Royal Brisbane and Women's Hospital Foundation research advisory committee	\$38968	2016 \$38968
Robinson H, <b>Barrett HL</b> , <b>Dekker Nitert M</b> , <b>Callaway L</b> , <b>de Jersey S</b>	Obstetric Medicine/Dietetics	Assessing ketone production after a meal with restricted carbohydrate in women with gestational diabetes mellitus	Royal Brisbane and Women's Hospital Foundation research advisory committee	\$40000	2016 \$40000
<b>Barrett HL</b> , Dekker Nitert M, <b>Callaway L</b> , McIntyre HD, <b>D'Emden M</b> , <b>de Jersey S</b>	Obstetric Medicine/Endocrinology/ Dietetics	Postprandial triglycerides in diabetes in pregnancy: A pilot study	Postprandial triglycerides in diabetes in pregnancy: A pilot study	\$36,740	2016 \$36740.00

## 2016 Research Publications

Type (Journal article / Book / Book chapter / Letter)	Publication information (RBWH staff in bold)
Journal article	<b>Petrie S, Barras M, Lust K</b> , Fagermo N, <b>Allen J, Martin J H</b> . Evaluation of therapeutic enoxaparin in a pregnant population at a tertiary hospital. <i>Internal Medicine Journal</i> . 46;7 July 2016
Book chapter	<b>Karin Lust</b> Chapter , 3rd edition Examination Obstetrics and Gynaecology. By Judith Goh and Michael Flynn 2016
Journal article	Pelzer, E., Gomez-Arango, L.F, <b>Barrett, H.L.</b> , M., Dekker Nitert, M. (2016). Review: Maternal health and the placental Microbiome. <i>Placenta</i> S0143-4004(16)30649-X.doi: 10.1016/j.placenta.2016.12.003
Journal article	Gallo, L.A., <b>Barrett, H.L.</b> , M., Dekker Nitert, M. (2016). Review: Placental transport and metabolism of energy substrates in maternal obesity and diabetes. <i>Placenta</i> doi:10.1016/j.placenta.2016.12.006
Journal article	<b>Barrett HL</b> , McIntyre H.D., D'Emden M, Dekker Nitert M Callaway L.K., Home monitoring of fasting and postprandial triglycerides in late pregnancy: A pilot study, <i>Diabetes Care</i> 2016. 40(1):e1-e2
Journal article	Gomez-Arango LF, <b>Barrett HL</b> , McIntyre HD, Callaway LK, Morrison M, Nitert MD, SPRING Trial Group. Increased Systolic and Diastolic Blood Pressure Is Associated With Altered Gut Microbiota Composition and Butyrate Production in Early Pregnancy. <i>Hypertension</i> . 2016 Oct;68(4):974-81
Journal article	Gomez-Arango, L., <b>Barrett, HL</b> , McIntyre, H.D., Callaway, L.K., Morrison, M., Dekker Nitert, M. (Accepted for publication 14 May 2016). Connections between the gut microbiome and metabolic hormones in early pregnancy in overweight and obese women. <i>Diabetes</i> . Aug;65(8):2214-23.
Journal article	Murphy VE, Jensen ME, Mattes J, Hensley MJ, Giles WB, Peek MJ, Bisits A, Callaway LK, McCaffery K, <b>Barrett HL</b> , Colditz PB, Seeho SK, Attia J, Searles A, Doran C, Powell H, Gibson PG. The Breathing for Life Trial: a randomised controlled trial of fractional exhaled nitric oxide (FENO)-based management of asthma during pregnancy and its impact on perinatal outcomes and infant and childhood respiratory health. <i>BMC Pregnancy Childbirth</i> . 2016 May 17;16:111
Journal article	<b>Sekar R</b> , Khatun M, <b>Barrett HL</b> , Duncombe G. A prospective pilot study in assessing the accuracy of ultrasound estimated fetal weight prior to delivery. <i>Aust N Z J Obstet Gynaecol</i> . 2016 Feb;56(1):49-53
Book chapter	McIntyre, H.D., Dekker Nitert, M., <b>Barrett, H.L.</b> , Callaway, L.K. (2016) GDM, obesity and pregnancy outcome. In <i>Textbook of Diabetes and Pregnancy</i> , third edition, Hod, Jovanovic, Di Renzo, De Leiva and Langer (Eds). CRC press, pp 246-252.
Journal article	<b>Eley VA, Callaway LK, van Zundert AA, Lipman J, Gallois C</b> . anaesthetists' experiences with the early labour epidural recommendation for obese parturients: a qualitative study. <i>Anaesth Intensive Care</i> . 2016 Sep;44(5):620-7.
Journal article	<b>Eley VA, van Zundert AA, Lipman J, Callaway LK</b> . Anaesthetic management of obese parturients: what is the evidence supporting practice guidelines? <i>Anesth Intensive Care</i> . 2016 Sep;44(5):552-9.
Journal article	<b>de Jersey SJ, Mallan K, Callaway L, Daniels LA, Nicholson JM</b> . A Cross Sectional Comparison of Predisposing, Reinforcing and Enabling Factors for Lifestyle Health Behaviours and Weight Gain in Healthy and Overweight Pregnant Women. <i>Matern Child Health J</i> . 2016 Jul 22. [Epub ahead of print]
Journal article	<b>Street S</b> , Dekker Nitert M, <b>Callaway LK</b> . Successful vaginal delivery following spontaneous adrenal haemorrhage at term. <i>BMJ Case Rep</i> . 2016 May 17;2016. pii: bcr2016215096. doi: 10.1136/bcr-2016-215096.
Journal article	Willmott L, White B, Gallois C, Parker M, Graves N, Winch S, <b>Callaway LK</b> , Shepherd N, Close E. reasons doctors provide futile treatment at the end of life: a qualitative study. <i>J Med Ethics</i> . 2016 Aug;42(8):496-503. doi: 10.1136/medethics-2016-103370.
Journal article	White B, Willmott L, Close E, Shepherd N, Gallois C, Parker MH, Winch S, Graves N, <b>Callaway LK</b> What does "futility" mean? An empirical study of doctors' perceptions. <i>Med J Aust</i> . 2016 May 2;204(8):318.
Journal article	Schoenaker DA, Mishra GD, <b>Callaway LK</b> , Soedamah-Muthu SS. The Role of Energy, Nutrients, Foods, and Dietary Patterns in the Development of Gestational Diabetes Mellitus: A Systematic Review of Observational Studies. <i>Diabetes Care</i> . 2016 Jan;39(1):16-23. doi: 10.2337/dc15-0540. Review.
Journal article	Glycaemic behaviour during breastfeeding in women with Type 1 diabetes. Achong N, McIntyre HD, <b>Callaway L</b> , Duncan EL. <i>Diabet Med</i> . 2016 Jul;33(7):947-55. doi: 10.1111/dme.12993.

## 2016 Conference Presentations – Invited Speaker, Oral and Poster

Type (Oral / Poster / Invited)	Presentation information (RBWH staff in bold)
Poster	<b>North A, Barrett H, Lust K, Whitfield K</b> Therapeutic heparin in the obstetric patient.
Poster	Gomez-Arango, L.F., <b>Barrett, H.L., Callaway, L.K.</b> , McIntyre, H.D., Morrison, M., Dekker Nitert, M. (2016) Odoribacter abundance and increased butyrate expression in the gut microbiome is associated with lower blood pressure in early pregnancy. IMSANZ/SOMANZ annual scientific meeting, Alice Springs, September 15-18
Poster	Gomez-Arango, L.F., <b>Barrett, H.L., Callaway, L.K.</b> , McIntyre, H.D., Morrison, M., Dekker Nitert, M. (2016) Abundance of Collinsella in the gut microbiome at 16 weeks gestation is positively correlated with insulin levels in overweight and obese women. Australasian Diabetes in Pregnancy Society annual scientific meeting, Gold Coast, August 26-27
Poster	Gomez-Arango, L.F., <b>Barrett, H.L., Callaway, L.K.</b> , McIntyre, H.D., Morrison, M., Dekker Nitert, M. (2016) Antibiotic exposure during pregnancy affects the oral microbiota in newborn infants. Australasian Diabetes in Pregnancy Society annual scientific meeting, Gold Coast, August 26-27
Poster	Gomez-Arango, L.F., <b>Barrett, H.L., Callaway, L.K.</b> , McIntyre, H.D., Morrison, M., Dekker Nitert, M. (2016) Abundance of Collinsella in the gut microbiome at 16 weeks gestation is positively correlated with insulin levels in overweight and obese women. Australian Diabetes Society annual scientific meeting, Gold Coast, August 24-26
Oral	<b>Barrett, H.L.</b> , Gomez-Arango, L.F., McIntyre, H.D., Morrison, M., <b>Callaway, L.K.</b> , Dekker Nitert, M. (2016). Maternal lipoproteins and gut microbiome in early pregnancy. Australian Diabetes Society annual scientific meeting, Gold Coast, August 24-26
Poster	Gomez-Arango, L.F., <b>Barrett, H.L., Callaway, L.K.</b> , McIntyre, H.D., Morrison, M., Dekker Nitert, M. (2016) Antibiotic exposure during pregnancy affects the oral microbiota in newborn infants. Australian and New Zealand Placental Research Association satellite meeting, Gold Coast, August 20-21
Oral	<b>Barrett HL</b> 2016, "Pregnancy in the workplace" IMSANZ/SOMANZ annual scientific meeting, Alice Springs, September 15-18
Oral	<b>Barrett HL</b> 2016, "Cystic Fibrosis in pregnancy" Australian Diabetes Society annual scientific meeting, Gold Coast, August 24-26
Poster	<b>Spooner M</b> , Wolski P, Eccles-Smith J, d'Emden M, Barrett H, Britten F. Cushing's Syndrome During Pregnancy: A Diagnostic and Management Conundrum. ESA-SRB- ANZBMS Symposium- Qld Australia, August 2016
Oral	<b>Spooner M</b> . Cushing's Syndrome During Pregnancy: A Diagnostic and Management Conundrum. IMSANZ /SOMANZ Conference- Alice Springs, Australia. September 2016

## Research Publications / Presentations Summary Table

Research Group / Department	Publications		Presentations National and International	
	Journal Articles	Books and Chapters	Oral	Poster
	16	2	4	7



## Betty Byrne Henderson Women's Health Research Centre (BBHWHRC)

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The centre was host to the LAW (Longitudinal Study of Ageing in Women) study. The study commenced in early 2001 with the primary aim of evaluating health-related changes occurring with the ageing process in women.

Multidisciplinary, prospective, and clinically-based, the study coordinates 10 linked projects: heart function, central arterial stiffness, cognitive function, balance and stability, bone health and fat/lean body composition, nutrition, endocrine function, dental health, sexuality and sociodemography.

The study has completed three 5-year stages – the first stage of intensive evaluation was supported by grants from the Royal Brisbane & Women's Hospital Foundation, National Health and Medical Research Council, Australian Menopause Society and others. The second stage was involved in the establishment of the master database and the third stage in the collation, analysis and publication of results. To date, there are 13 completed higher degrees (1 PhD and 3 BSc (Hon)) and 34 peer-reviewed papers.

The study is now in its fourth stage, beginning its 16th year and has conducted 2 follow-up questionnaire surveys of the health status of the cohort. As the study data matures with time, the information on outcomes from the women becomes increasingly more valuable in the determination of positive and negative associations between how these women live their lives in an urban community and the development of serious medical conditions. This is relevant information to advise on healthcare strategies.

The current plan of the study is to continue to analyse the data and collate the results to fulfil the objectives of the study, with the assistance of a biostatistician and collaborators. Given available funding, the centre will organise another questionnaire survey in 2017-18 to obtain more updated information from the women.

**Current staff:** Professor S. K. Khoo  
Principal & Director of Study, University of Queensland (current)  
Biostatistician

