



Mercy Health

Care first

# Research and Development Report 2016



Our vision is to build an enduring capacity and passion to serve those with special needs



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## Message from the Group Chief Executive Officer

### New horizons in care

Within Mercy Health's rich culture of innovation, one theme remains constant: our determination to improve health outcomes for people facing some of humanity's greatest health challenges.

Our research community continues to enlarge the scope of our capacity to care for the unborn and newborn, for women living with cancer and chronic disease, for older Australians, and for people in their final years.

A sustained focus on driving improvements for the most vulnerable has produced several milestones in the past 12 months: the launch of Mercy Perinatal; promising avenues for curing preeclampsia and predicting preterm birth; and new partnerships in aged care research, among many achievements.

Our continuing success is fueled by the invaluable support of our academic, government and private sector research partners. We thank them warmly for sharing our vision to respond to community need by opening new horizons in care.

We are also indebted to those whom we serve. Their selfless participation in our studies and their gifts to our Foundation not only make our work possible, but ensure it will continue to benefit future generations.

Adjunct Professor Stephen Cornelissen  
Group Chief Executive Officer





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## Message from the Chief Medical Officer

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### Welcome to the Mercy Health Research and Development Report 2016

The report highlights a year of exceptional achievement across our research program. Several long-term studies within our University of Melbourne Department are yielding results of global significance, while our work in surgical, allied health and aged care research continues to evolve.

I am proud to note the growing worldwide recognition for our commitment to innovation, proving the expertise and endeavour of our researchers translates to better care for communities as distant as South Africa.

I thank the many funding bodies within and beyond Mercy Health who continue to sustain our research.

I also wish to thank the Human Research Ethics Committee for their fundamental support.

Finally, I thank all who have contributed to this year's report, including my Executive Assistant Vicky Karitinos.

Associate Professor David Allen  
Chairman, Academic Research and Development Committee



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# Thank you to our supporters

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Mercy Health gratefully acknowledges funding support from the following sources in 2016:

Austin Medical Research Foundation

Better Care Victoria

Catholic Health Australia

Diabetes Australia

Rebecca L. Cooper Medical Research Foundation

EME/NIHR, part of MRC/NHS UK

Endocrine Society of Australia

Mercy Health Academic Research and Development Committee Small Project Grants

Mercy Health Foundation

National Health and Medical Research Council

Norman Beischer Medical Research Foundation

RANZCOG Foundation

Stillbirth Foundation Australia

Sylvia and Charles Viertel Charitable Foundation

University of Melbourne Early Career Research Grant Scheme

University of Melbourne Research Grant Support Scheme

veski Inspiring Women Fellowship

Wellcome Trust.



## New projects 2016

Mary McCarthy

**Quality of information and psychological support for women who present to Werribee Mercy Hospital and Mercy Hospital for Women Emergency Departments following early pregnancy loss**

Dr Lisa Hui

**Evaluating the clinical implementation of the Mercy Hospital for Women 2013 Hepatitis B Clinical Practice Guideline**

Dr Lin Li Ow

**Mini or retro pubic sling in women with intrinsic sphincter deficiency: A RCT(MiniRISD)**

Linda Jackson

**Do high-risk normoglycemic subjects need glycaemic follow up beyond 28 weeks?**

Dr Alexis Shub

**Early diagnosis of Gestational Diabetes Mellitus (GDM)**

Dr Dan Casalaz

**Feasibility and cost effectiveness pilot study of targeted salivary CMV screening**

## Ongoing projects

Dr Martha Lappas

**Molecular mechanisms controlling pregnancy and labour (tissues)**

Dr Megan Di Quinzio

**Identification of novel biomarkers to predict preterm labour**

Dr Harry Georgiou

**The Gestational Diabetes Follow-Up Project: Screening for early markers of Type 2 Diabetes in an at-risk population**

Professor Sue Walker

**The impact of sleep disordered breathing on overnight fetal heart rate patterns in pregnancies complicated by preterm uterine growth restriction**

Dr Josephine Power

**Mercy Pregnancy and Emotional Wellbeing Study (MPEWS) – Wave 6**



A close-up photograph of a newborn baby with dark skin, sleeping peacefully. The baby is wrapped in a thick, textured blanket with a vibrant rainbow pattern of yellow, orange, and red. The background is a soft, out-of-focus white fabric.

# Women's and Children's Services

We are present for others in their time of need

compassion

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# Mercy Health research in focus: Mercy Perinatal

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On 5 December 2016, Mercy Health launched a bold venture – Mercy Perinatal. Mercy Perinatal aspires to become a leading international perinatal centre of excellence uniting the three pillars of education, clinical care and research.

Mercy Perinatal has taken a lead in education initiatives. The Twilight Seminar series is run bimonthly and streamed live to 30-50 sites around Australia and the world. The group's annual flagship conference, the Global Obstetric Update, attracts an audience from across Australia and abroad to learn from some of the world's most esteemed academics.

Mercy Perinatal is already one of the leading centres of maternal fetal medicine in Australia with a large number of specialty clinics. It leads an active telemedicine program providing collaborative support to colleagues in Darwin.

Complementing its education and clinical pillars, the third pillar – research – is focused on developing new diagnostics and treatments to tackle major complications of pregnancy. Research teams under the Mercy Perinatal banner have already taken therapeutic and diagnostic concepts from initial discovery in the laboratory to major international trials in the United Kingdom, South Africa, New Zealand and Australia.



L-R: Group CEO Adjunct Professor Stephen Cornelissen, Chief Executive – Health Services Adjunct Professor Linda Mellors, Parliamentary Secretary for Medical Research Frank McGuire MP, Professor Stephen Tong and Professor Sue Walker at the Mercy Perinatal launch in December 2016





Professor Sue Walker



Professor Stephen Tong

Mercy Health Group CEO Adjunct Professor Stephen Cornelissen explains the vital importance of translational research.

“Mercy Health was established to make an impact in the lives of those in need. In areas like pregnancy and motherhood we can have a profound impact on the success of our society and our world. Caring for women and bringing them and their babies safely through pregnancy begins a chain of good opportunities for those children, for their parents and for our community,” Stephen says.

“Worldwide, 500,000 babies are lost to just one condition which threatens pregnancies every year: preeclampsia. Imagine the benefits worldwide if those babies and mothers were given a better chance of survival – benefits to their lives, healthier communities, reduced costs to our health systems and a real sense of hope that we can solve some of the medical problems that have remained unsolved despite a wealth of progress in other areas. This is where we want to lead. This is where we want to deliver hope.”

**Mercy Perinatal co-directors, professors Sue Walker and Stephen Tong, are both obstetricians with complementary skills.**

Sue leads Mercy Hospital for Women’s Perinatal Medicine Department, which provides clinical care for some of the most complex pregnancies in Victoria. In 2011, she was appointed to a prestigious personal chair: the Sheila Handbury Chair of Maternal Fetal Medicine, University of Melbourne. Sue is currently the Head of the Department of Obstetrics and Gynaecology, University of Melbourne, in recognition of her contribution to research, teaching, engagement and leadership.

Stephen is a clinician-scientist who leads the Translational Obstetrics Group (TOG), a team of 10-15 researchers based at Mercy Hospital for Women who operate across several sub-groups. Stephen has published over 120 papers, most in leading international journals. He currently holds six NHMRC project grants. A grant he held was selected by NHMRC as one of the ‘10 best project grants’ featured in 2016. Stephen also holds two patents.

“Research teams under the Mercy Perinatal banner have already taken therapeutic and diagnostic concepts from initial discovery in the laboratory to major international trials”

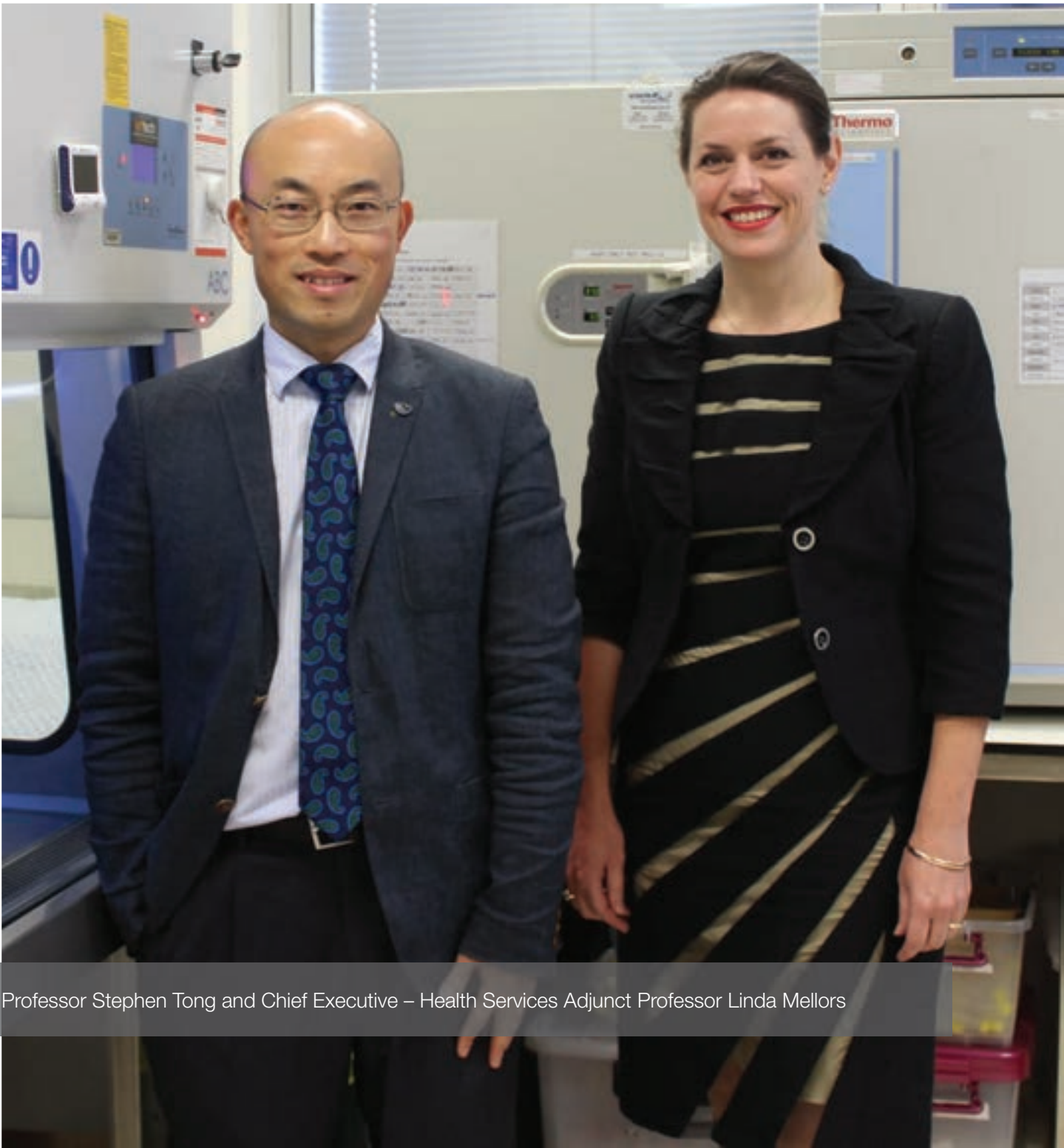
Both Stephen and Sue already have strong national and international profiles and a web of global research collaborations.

A key ingredient in the early success of Mercy Perinatal has been the relationship between the clinical research team based at Mercy Hospital for Women, the University of Melbourne and Mercy Health.

Mercy Health Chief Executive – Health Services Adjunct Professor Linda Mellors explains how the relationship is sustained at Mercy Perinatal.

“Mercy Health has relationships with major research and clinical training universities throughout Victoria and Australia. Through our partnerships we can provide a strong pipeline of research, clinical graduates, and in between, a crop of the best clinical researchers in our fields of research,” Linda says.

“To have the combination of world-leading clinical care and groundbreaking clinical research, combined with the opportunity to incubate new talent in a tertiary teaching hospital is uncommon. Stephen Tong and Sue Walker provide something that sets Mercy Perinatal apart.”



Professor Stephen Tong and Chief Executive – Health Services Adjunct Professor Linda Mellors





Three particular Mercy Perinatal research projects have sparked worldwide interest.

### Ectopic pregnancy

Ectopic pregnancy – in which a fertilised egg grows outside the womb – affects 1-2 per cent of all pregnancies. Mercy Perinatal is seeking ways to develop effective drug treatments to completely replace surgery as a way to treat ectopic pregnancies. If they succeed, it will mean safer, cheaper and more accessible treatment which could mean many more lives saved, especially in the developing world where surgery is often unavailable.

The research teams now under the Mercy Perinatal umbrella previously identified a promising drug combination of seven tablets (gefitinib) and one injection (methotrexate). Collaborating with the University of Edinburgh, they have taken this concept to a large multicentre clinical trial in the United Kingdom. They are also exploring the remarkable possibility that a tablet-only treatment could be devised to replace surgery.

### Stillbirth

About one in 130 pregnancies in Australia ends in stillbirth, a tragically high figure that Mercy Perinatal is attempting to combat through development of blood tests to aid treatment decisions. The first blood test would allow clinicians to identify more cases of undetected fetal growth restriction, which carries a 3-4 fold increased risk of stillbirth. This forms the basis of the Fetal Longitudinal Assessment of Growth (FLAG) Study. The second blood test aims to detect danger signals in a failing placenta, where the fetus is at critically low levels of oxygen and high risk of stillbirth. The forms the basis of the Fetal Oxygenation (FOX) Study.

### Preeclampsia

Preeclampsia affects five per cent of women and claims the lives of about 70,000 women and 500,000 babies worldwide each year. Mercy Perinatal has set up a translational drug screening pipeline to discover novel preeclampsia treatments. This flagship Mercy Perinatal research theme spans the full range of research methods, from laboratory studies to large drug trials in pregnant women in Australia and South Africa. This drug discovery 'pipeline' has uncovered a number of exciting candidate treatments for preeclampsia.

“About one in 130 pregnancies in Australia ends in stillbirth, a tragically high figure that Mercy Perinatal is attempting to combat”

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# University of Melbourne Department of Obstetrics and Gynaecology, Mercy Hospital for Women

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## Perinatal Research Group (Professor Sue Walker)

The Mercy Hospital for Women Perinatal Research Group comprises maternal fetal medicine clinical researchers, led by Professor Sue Walker.

Our research themes include:

- advances in prenatal genomic testing
- diabetes and obesity
- fetal growth restriction and stillbirth
- multicentre national and international clinical trials
- perinatal sleep research.

### The Perinatal Research Group includes:

Professor Sue Walker CMFM  
(research themes: fetal growth restriction; prevention of stillbirth; perinatal sleep research)

Dr Alexis Shub CMFM  
(research theme: obesity/diabetes)

Dr Elizabeth McCarthy CMFM  
(research theme: obesity and pregnancy loss)

Dr Lisa Hui CMFM  
(research themes: cell free nucleic acids in perinatal medicine; infectious diseases in pregnancy)

Dr Alison Fung CMFM  
(research theme: perinatal sleep research)

Dr Alice Robinson COGU  
(research theme: fetal growth restriction and stillbirth)

Dr Teresa MacDonald, PhD scholar  
(research theme: fetal growth restriction and stillbirth)

Nadia Bardien, M Mid  
(research theme: fetal growth and wellbeing)

Kirsty Dane, Research Midwife and M Mid scholar  
(research theme: disorders of fetal growth)

Gabrielle Fleming, Research Midwife

Anna Middleton, Research Midwife

Val Kyritsis, Research Midwife.

In 2016, Dr Lisa Hui received the Harold Mitchell Foundation Travel Fellowship (postdoctoral) and an NHMRC Career Development Fellowship. Lisa was also appointed Associate Professor, University of Melbourne.

Dr Teresa MacDonald received the Harold Mitchell Foundation Travel Fellowship (PhD student) and Organon Award, Best Oral Presentation, RANZCOG trainees.

## Projects and grants

*Improving the prediction and detection of contributors to term stillbirth*

S Walker, S Tong, C Whitehead

NHMRC Project Grant (2014-2016)

*The GAP study. Towards adequate national provision of genomic testing in pregnancy*

J Halliday, SP Walker et al.

NHMRC Project Grant (2014-2016)

*DAME: diabetes and milk expressing: an RCT*

D Forster, SP Walker et al.

NHMRC Project Grant (2014-2016)

*Measuring amniotic fluid cell-free fetal RNA: a potential biomarker for predicting fetal development*

S Walker (CIB)

Norman Beischer Medical Research Foundation 2016

*Improving the prediction and prevention of late pregnancy stillbirth*

T MacDonald, S Walker

RANZCOG Foundation 2016

*Fetal Longitudinal Assessment of Growth (FLAG) Study*

S Walker (CIA)

Stillbirth Foundation Australia 2016

*Developing potential biomarkers of fetal brain development after congenital cytomegalovirus infection*

L Hui (CIA)

Sylvia and Charles Viertel Charitable Foundation (2016-2017)

*Noninvasive prenatal testing (NIPT) to detect Early Ovarian cancer (NEO study)*

L Hui (CIA)

Norman Beischer Medical Research Foundation 2016

*Can circulating biomarkers predict the development of type 2 diabetes in women with a previous GDM pregnancy?*

M Lappas, A Shub

Norman Beischer Medical Research Foundation (2016-2017)

*Circulating cardiovascular biomarkers to predict the development of type 2 diabetes in women with a previous GDM pregnancy*

M Lappas, A Shub

Norman Beischer Medical Research Foundation (2016-2017).





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## Translational Obstetrics Group (Professor Stephen Tong)

The Translational Obstetrics Group, led by Professor Stephen Tong, is a team of dedicated clinician-scientists and scientists whose focus is to pursue scientific discoveries to improve health outcomes for mothers and babies.

The Translational Obstetrics Group has continued to progress major research initiatives to devise new treatments and diagnostics for major pregnancy complications. Research themes include:

- medication-based treatments to replace surgery for ectopic pregnancies
- treatments for severe preeclampsia
- diagnostics to prevent stillbirth.

### The Translational Obstetrics Group includes:

Professor Stephen Tong

Dr Tu'uhevaha Kaitu'u-Lino

Dr Natalie Hannan

Roxanne Hastie

Dr Owen Stock

Dr Fiona Brownfoot

Sally Beard

Natalie Binder

Ping Cannon

Vi Nguyen

Dr Teresa MacDonald

Dr Lisa Hui

Dr Clare Whitehead.

In 2016 the Translational Obstetrics Group received four new NHMRC project grants and continues to be directly funded by two additional NHMRC project grants, two NHMRC Fellowships and a University of Melbourne Fellowship. The group also receives funding from various sources, including the Austin Medical Research Foundation, RANZCOG Research Foundation and Norman Beischer Medical Research Foundation.

In 2016, Professor Stephen Tong received Catholic Health Australia's Emerging Leader Award, and an award for one of the 10 best NHMRC research projects in 2015 nationally for *Combination methotrexate and gefitinib to cure ectopic pregnancies: phase I-II clinical trials*. Stephen also convened and ran the Global Obstetric Update 2016 (with Professor Sue Walker, Associate Professor Lisa Hui and Dr Alison Fung) and helped coordinate and run the Australian Preeclampsia network meeting in 2016.

Dr Natalie Hannan was an Society for Reproductive Biology Newcastle Emerging Leaders finalist. Natalie also served as a veski committee member as part of their program to inspire women in science, and as an executive committee member for both the Australian New Zealand Placental Research Association and International Federation of Placental Associations.

Dr Fiona Brownfoot received a Society for Reproductive Investigation New Investigator Award at their annual meeting in Montreal, Canada, and received the Hubert Jacobs Best Publication Award.

Roxanne Hastie (PhD student) won a highly prestigious 'President's Award' at the International Society for the Study of Hypertension in Pregnancy (ISSHP) biannual meeting in Sao Paolo, Brazil. Roxanne also won the Austin Life Science University of Melbourne Research Prize at Austin Research Fest in October 2016.

Dr Tu'uhe-vaha Kaitu'u-Lino served as a committee member for the Society for Reproductive Biology.

“The Translational Obstetrics Group has continued to progress major research initiatives to devise new treatments and diagnostics for major pregnancy complications.”



## Projects and grants

*Systematic screening approach to identify new therapeutics for preeclampsia*

S Tong, T Lino, N Hannan

NHMRC Project Grant (2016-2019)

*Developing diagnostics and therapeutics for preeclampsia: targeting a novel placental specific sFlt-1 variant*

S Tong, K Palmer, T Lino

NHMRC Project Grant (2014-2016)

*Relaxin treatment of preeclampsia*

S Tong (CIB)

NHMRC Project Grant (2014-2016)

*Investigation of soluble endoglin: the toxin responsible for severe preeclampsia*

T Lino

NHMRC Project Grant (2013-2016)

*Developing molecular therapeutics and diagnostics for pregnancy complications*

S Tong

NHMRC Career Development Fellowship (2013-2016)

*Targeting the toxins of preeclampsia*

T Lino

NHMRC Career Development Fellowship (2014-2016)

*Corin, a cardiac enzyme, is critical to pregnancy success*

N Hannan

NHMRC Project Grant (2014-2016)

*Efficacy and Mechanisms Evaluation/ National Institute for Health Research. GEM3: A multi-centre double-blind randomised trial of a combination of methotrexate and gefitinib versus methotrexate alone as a treatment for ectopic pregnancy.*

S Tong (CIB)

EME/NIHR, part of MRC/NHS UK

*Clinical Research Training Fellowship to support Lisa Campbell*

S Tong (CIC)

Wellcome Trust

*Identifying biomarkers for the prediction of preeclampsia at 28 weeks gestation*

T Lino, T MacDonald, S Walker, S Tong

Norman Beischer Medical Research Foundation 2016

*Vinorelbine, a novel therapeutic for the treatment of ectopic pregnancy*

T Lino (CIA)

Austin Medical Research Foundation 2016

*Combination of promising candidate therapeutics to treat preeclampsia*

N Hannan (CIA)

Norman Beischer Medical Research Foundation 2016

*Investigating mechanisms of preeclampsia and developing novel therapeutics*

N Hannan (CIA)

veski Inspiring Women Fellowship (2016-2018)

*Nanoparticle delivery of therapeutics to the placenta to treat preeclampsia*

N Hannan (CIA)

University of Melbourne Research Grant Support Scheme 2016

*Clopidogrel: a potential treatment for preeclampsia*

N Hannan (CIA)

RANZCOG Foundation 2016.

## Publications

Palmer KR, Tong S, Tuohey L, Ye L, Hannan NJ, Brownfoot FC, Illanes SE, Kaitu'u-Lino TJ. Jumonji domain containing protein 6 is decreased in preeclamptic placentas and regulates sFLT-1 splice variant production. *Biology of Reproduction* 2016;93(3):59. doi: 10.1095/biolreprod.115.134460

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Standing L-R: Roxanne Hastie, Teresa MacDonald, Stephen Tong, Ping Cannon, Owen Stock, Minh Deo, Sally Beard. Sitting: Natalie Hannan, Tu'uhevaha Kaitu'u-Lino

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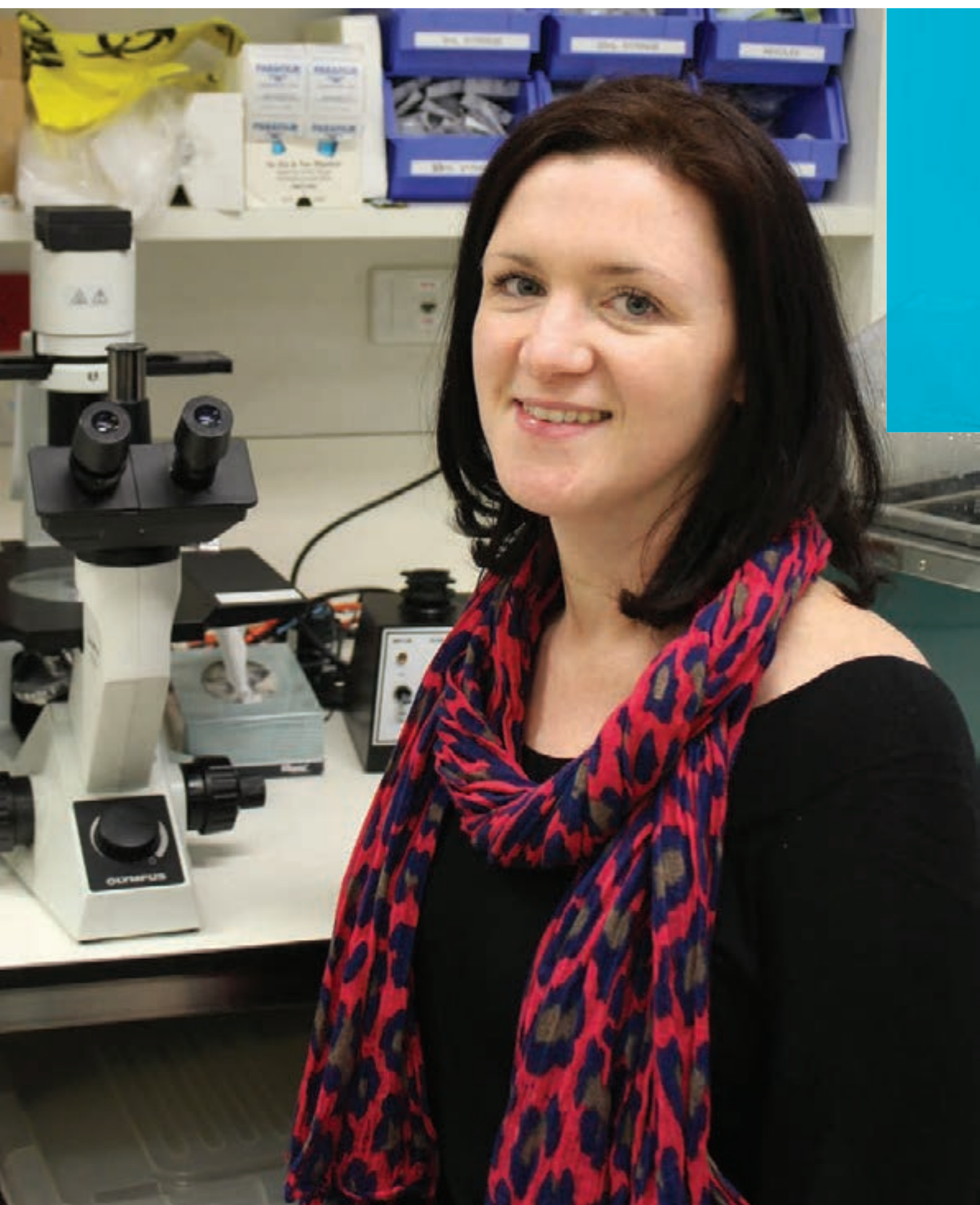
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## Dr Natalie Hannan, Mercy Hospital for Women

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Preeclampsia kills more than 60,000 women and 500,000 babies every year, the majority in developing countries. As principal investigator in work that has led to a potential breakthrough in treatment for this deadly pregnancy disease, Mercy Hospital for Women researcher Dr Natalie Hannan is focused on changing the future of maternal child health.

Dr Natalie Hannan and the Translational Obstetrics Group, headed by Professor Stephen Tong, discovered that esomeprazole, a commonly prescribed reflux drug, may be effective in reducing the severity of preeclampsia: a classic example of intuitive research.

“In preeclampsia the placenta is highly stressed. A key thought in the field is that enhancing its antioxidant defences may help to relieve the stress, reduce production of toxic factors and thus reduce disease severity,” Natalie explains.

“We came across a publication showing that one of the proton pump inhibitors (the family of drugs that esomeprazole belongs to) was able to enhance antioxidant defences in the cells lining the stomach, where these drugs are used to relieve severe gastric reflux, by blocking acid secretion.

“However, we never anticipated that these drugs, particularly esomeprazole, would also reduce the production of toxic factors released by the preeclamptic placenta, or rescue vessel injury, both of which are central to preeclampsia progression.”

A subsequent clinical trial run in South Africa, where rates of severe preeclampsia are extremely high, is highlighting the value of the breakthrough to women and children in the developing world.

“We were very fortunate that at the time we were discovering the ability of esomeprazole to alleviate disease in models in the laboratory,

Professor Sue Walker was hosting a South African Maternal Fetal Medicine Fellow, Dr Cathy Cluver, at Mercy Hospital for Women. Cathy had heard about the promising results and was excited to run the clinical trial when she returned home. So we have now established a very exciting and strong collaboration with Tygerberg Hospital in Cape Town.

“If the trial is successful and shows a benefit to women with preeclampsia by reducing the severity of the disease and allowing them to continue the pregnancy, we will have a simple treatment that could be used by both developed and developing nations. We’re planning future trials here in Australia, with many experts that care for women and their children affected by this terrible complication.”

Many more frontiers remain to be conquered.

“I am running another very exciting project that looks at delivering medicine directly to the placenta itself, to reduce the production of a key toxin we know is produced by the preeclamptic placenta,” Natalie says. “We’re using nanoparticles (which are like tiny bubbles) that are targeted to migrate to the placenta, and loading them with agents that will block the gene that makes the toxic protein of preeclampsia. This may reduce disease severity in the mother and buy time in utero for the baby.

“If we can successfully develop placental-specific delivery of medicine via these nanoparticles, we

have the opportunity to deliver other therapeutics to dysfunctional placentas in cases where the baby is very small (growth restricted) due to poor placental function. Enhancing placental growth and function may enable us to restore babies' growth inside the womb."

While funding remains a challenge, Natalie is determined to see her lifesaving work continue to evolve. "In the future, with the right funding and collaboration, I really hope to make headway into what causes the most serious complications of pregnancy, particularly preeclampsia, recurrent miscarriage, fetal growth restriction and stillbirth," she says. "These complications are likely to occur from poor development of the placenta or placental dysfunction. If we know what goes wrong in these situations, we may be able to prevent the terrible outcomes associated with them."

Joining Mercy Hospital for Women's University of Melbourne Department of Obstetrics and Gynaecology in 2012, Natalie has seen its research output go from strength to strength. "It's recognised as a leading research department under the leadership of the amazing Professor Walker, and is receiving great support, notably from the National Health and Medical Research Council," she affirms.

"I am supported by my family, especially my husband. I'm also really fortunate to be part of a great team that is focussed on a common goal: to improve the health and wellbeing of women and their families.

"I'm especially lucky to work with one of my closest friends, Dr Tu'uhevaha Kaitu'u-Lino, as well as my mentors professors Tong and Walker, who have provided many key opportunities that have progressed this work."

“South African Maternal Fetal Medicine Fellow Dr Cathy Cluver had heard about the promising results and was excited to run the clinical trial when she returned home. So we have now established a very exciting and strong collaboration with Tygerberg Hospital in Cape Town.”

Dr Natalie Hannan





We welcome people with warmth and offer comfort

hospitality



L-R: Gabrielle Pell, Dr Harry Georgiou and Dr Megan Di Quinzio

## Preterm Labour and Gestational Diabetes Mellitus Research Group (Dr Harry Georgiou)

Dr Harry Georgiou's team continues to investigate the causes of preterm labour and gestational diabetes mellitus, with a view to developing preventative therapies.

### The group includes:

Dr Harry Georgiou

Dr Meagan Di Quinzio

Gabrielle Pell.

### Projects and grants

*The effect of supplemental progesterone on the expression of a biomarker of preterm labour*  
HM Georgiou, M Di Quinzio, D Heathcock  
Norman Beischer Medical Research Foundation (2015-2016)

*Using biomarkers found in the cervicovaginal fluid of pregnant women to develop an algorithm-based model to predict preterm labour*  
HM Georgiou, M Di Quinzio, S Brennecke  
Carmentix (2016-2017)

*Development of type 2 diabetes in women with previous gestational diabetes mellitus*

*The GDM Follow-Up Project:*

*Recruitment of patients*

HM Georgiou, D Jinks

Norman Beischer Medical Research Foundation  
2016.

### Publication

Lappas M, Jinks D, Shub A, Willcox JC, Georgiou HM, Permezel M. Postpartum IGF-I and IGFBP-2 levels are prospectively associated with the development of type 2 diabetes in women with previous gestational diabetes mellitus. *Diabetes Metab* 2016 Jul 4. pii: S1262-3636(16)30435-9. doi: 10.1016/j.diabet.2016.06.004.



## Obstetrics, Nutrition and Endocrinology Research Group (Associate Professor Martha Lappas)

Associate Professor Martha Lappas' group is focused on novel therapeutics to prevent preterm birth and dietary phytochemicals to prevent the development of gestational diabetes mellitus (GDM).

### The group includes:

Associate Professor Martha Lappas, Team Leader

Dr Ratana Lim, Postdoctoral Fellow

Dr Stella Liong, Postdoctoral Fellow

Gillian Barker, Senior Research Assistant

Caitlyn Nguyen-Ngo, Honours student

Priyanka Goradia, Scholarly Selective student

Manisha Miranda, Scholarly Selective student

Jacqueline Free, Research Midwife.

In 2016, Caitlyn Nguyen-Ngo graduated with a Bachelor of Science (Honours) with a High Distinction.

Stella Liong was awarded an Endocrine Society of Australia travel award (\$200), and a Rising Stars Award at the Catholic Health Australia Medical Research Symposium (\$300).

### Projects and grants

*Understanding what triggers birth – new opportunities for prevention of early delivery*

M Lappas

NHMRC Career Development Fellowship, Level 2 (2013-2017)

*Understanding the mechanisms that regulate infection-induced preterm birth*

M Lappas, M Permezel

NHMRC (2014-2016)

*The transmission of perinatal maternal mental health to preschool emotional disorders:*

*Examining pathways and intervention points in the MPEWS study*

M Galbally, A Lewis, P Boyce, M van IJzendoorn, T Oberlander, E van Rossum, M Lappas, J Ryan, M Mohebbi

NHMRC (2016-2020)

*Sirtuin 1 – A key player in the pathogenesis of gestational diabetes mellitus?*

M Lappas

Norman Beischer Medical Research Foundation (2016-2017)

*Can circulating biomarkers predict the development of type 2 diabetes in women with a previous GDM pregnancy?*

M Lappas, A Shub

Norman Beischer Medical Research Foundation (2016-2017)

*Circulating cardiovascular biomarkers to predict the development of type 2 diabetes in women with a previous GDM pregnancy*

M Lappas, A Shub

Norman Beischer Medical Research Foundation (2016-2017)

*Does breastfeeding protect against the development of impaired glucose tolerance or type 2 diabetes?*

A Shub, M Lappas

Norman Beischer Medical Research Foundation (2016-2017)

*Do women with GDM who have overweight offspring have increased leptin and decreased adiponectin levels?*

A Shub, M Lappas

Norman Beischer Medical Research Foundation (2016-2017)

*Can citrus flavones prevent the development of gestational diabetes mellitus (GDM)?*

M Lappas, S Liong, R Lim

Diabetes Australia and the Rebecca L. Cooper Medical Research Foundation 2016

*Can dietary phytochemicals prevent the development of gestational diabetes?*

S Liong

RANZCOG, University of Melbourne, Early Career Researcher Grant (2015-2016)

*The dietary phytochemical resveratrol as a novel therapeutic for gestational diabetes mellitus*

S Liong

Endocrine Society of Australia, Postdoctoral Award 2016.



## Publications

Koay HF, Gherardin NA, Enders A, Loh L, Mackay LK, Almeida CF, Russ BE, Nold-Petry CA, Nold MF, Bedoui S, Chen Z, Corbett AJ, Eckle SB, Meehan B, d'Udekem Y, Konstantinov IE, Lappas M, Liu L, Goodnow CC, Fairlie DP, Rossjohn J, Chong MM, Kedzierska K, Berzins SP, Belz GT, McCluskey J, Uldrich AP, Godfrey DI, Pellicci DG. A three-stage intrathymic development pathway for the mucosal-associated invariant T cell lineage. *Nature Immunology* 2016;17:1300-1311

Lappas M. The Adaptor Protein p62 Mediates Nuclear Factor kappaB Activation in Response to Inflammation and Facilitates the Formation of Prolabor Mediators in Human Myometrium. *Reproductive Sciences* 2016

Lappas M. Copper metabolism domain-containing 1 represses the mediators involved in the terminal effector pathways of human labour and delivery. *Molecular Human Reproduction* 2016;22:299-310

Lappas M. RAF1 is increased in labouring myometrium and modulates inflammation-induced pro-labour mediators. *Reproduction* 2016;151:411-420

Lappas M, Jinks D, Shub A, Willcox JC, Georgiou HM, Permezel M. Postpartum IGF-I and IGFBP-2 levels are prospectively associated with the development of type 2 diabetes in women with previous gestational diabetes mellitus. *Diabetes & Metabolism* 2016;42:442-447

Lim R, Barker G, Lappas M. Optineurin suppression activates the mediators involved in the terminal effector pathways of human labour and delivery. *Reproduction, Fertility, and Development* 2016

Lim R, Barker G, Liong S, Nguyen-Ngo C, Tong S, Kaitu'u-Lino T, Lappas M. ATF3 is a negative regulator of inflammation in human fetal membranes. *Placenta* 2016;47:63-72

Lim R, Barker G, Menon R, Lappas M. A Novel Role for SIRT3 in Regulating Mediators Involved in the Terminal Pathways of Human Labor and Delivery. *Biology of Reproduction* 2016;95:95

Lim R, Tran HT, Liong S, Barker G, Lappas M. The Transcription Factor Interferon Regulatory Factor-1 (IRF1) Plays a Key Role in the Terminal Effector Pathways of Human Preterm Labor. *Biology of Reproduction* 2016;94:32

Liong S, Lappas M. Endoplasmic reticulum stress regulates inflammation and insulin resistance in skeletal muscle from pregnant women. *Molecular and Cellular Endocrinology* 2016;425:11-25

McCarthy EA, Walker SP, Ugoni A, Lappas M, Leong O, Shub A. Self-weighing and simple dietary advice for overweight and obese pregnant women to reduce obstetric complications without impact on quality of life: a randomised controlled trial. *BJOG: An International Journal of Obstetrics and Gynaecology* 2016;123:965-973

Murthi P, Davies-Tuck M, Lappas M, Singh H, Mockler J, Rahman R, Lim R, Leaw B, Doery J, Wallace EM, Ebeling PR. Maternal 25-hydroxyvitamin D is inversely correlated with foetal serotonin. *Clinical Endocrinology* 2016

Murthi P, Sarkis R, Lim R, Nguyen-Ngo C, Pratt A, Liong S, Lappas M. Endocan expression is increased in the placenta from obese women with gestational diabetes mellitus. *Placenta* 2016;48:38-48

Galbally M, van Ijzendoorn M, Permezel M, Saffery R, Lappas M, Ryan J, von Rossum E, Johnson AR, Teti D, Lewis AJ. Mercy Pregnancy and Emotional Wellbeing Study (MPEWS): understanding maternal mental health, fetal programming and child development. Study design and cohort profile. *International Journal of Methods in Psychiatric Research* 2016

Willcox JC, Wilkinson SA, Louizos CC, Ball K, Crawford DA, McCarthy EA, Fjeldsoe B, Whittaker R, Maddison R, Campbell KJ. A mobile health intervention promoting healthy gestational weight gain for women entering pregnancy at a high body mass index: the txt4two pilot randomised controlled trial. *BJOG: An International Journal of Obstetrics and Gynaecology* 2016.

# Gestational Diabetes Mellitus and Obesity in Pregnancy Research Group (Dr Alexis Shub)

Dr Alexis Shub's research group is focused on two key, linked areas: gestational diabetes mellitus (GDM) and obesity in pregnancy.

## The GDM research team includes:

Dr Alexis Shub

Dr Elizabeth McCarthy

Christine Houlihan

Tess Chee

Alex Templeton.

## The obesity in pregnancy research team includes:

Dr Alexis Shub

Dr Elizabeth McCarthy

Professor Sue Walker.

## Projects and grants

*Can circulating biomarkers predict the development of type 2 diabetes in women with a previous GDM pregnancy?*

M Lappas, A Shub

Norman Beischer Medical Research Foundation

*Circulating cardiovascular biomarkers to predict the development of type 2 diabetes in women with a previous GDM pregnancy*

M Lappas, A Shub

Norman Beischer Medical Research Foundation

*Does breastfeeding protect against the development of impaired glucose tolerance or type 2 diabetes?*

A Shub, M Lappas

Norman Beischer Medical Research Foundation

*Distinguishing transient from persisting gestational hypertension in the pregnancy day assessment unit (Outcomes of diagnostic amniocentesis and chorionic villous sampling at Mercy Hospital for Women)*

E McCarthy, L Hui, T Carins

*Audit of maternal pertussis immunization at The Northern Hospital*

E McCarthy, P Howat, AJ de Faria

*Re-audit of term breech outcomes*

E McCarthy, S Ruff

*New FFF study analysis and updated meta-analysis of maternal emotional outcomes following diet or lifestyle interventions in pregnancy*

E McCarthy, N Chisholm

*Qualitative studies into pregnant women and medical staff's perceptions of current and future, video-assisted methods for teaching medical students obstetric abdominal examination*

E McCarthy, D Wilson

*Retrospective review of mid-trimester loss at Mercy Hospital for Women, including the rates of antiphospholipid antibody positivity, negativity and lack of testing*

E McCarthy, R Taleb

*Audit of Early Pregnancy Assessment Clinic (EPAC) at Mercy Hospital for Women*

E McCarthy, M Overdevest.

## Publications

Lappas M, Jinks D, Shub A, Willcox JC, Georgiou HM, Permezel M. Postpartum IGF-I and IGFBP-2 levels are prospectively associated with the development of type 2 diabetes in women with previous gestational diabetes mellitus. *Diabetes & Metabolism* 2016; 42:442-447

Flynn AC, Dalrymple K, Barr S, Poston L, Goff LM, Rogozińska E, van Poppel MN, Rayanagoudar G, Yeo S, Barakat R, Perales M, Bogaerts A, Cecatti JG, Dodd J, Owens J, Devlieger R, Teede H, Haakstad L, Motahari-Tabari N, Tonstad S, Luoto R, Guelfi K, Petrella E, Phelan S, Scudeller TT, Hauner H, Renault K, Sagedal LR, Stafne SN, Vinter C, Astrup A, Geiker NR, McAuliffe FM, Mol BW, Thangaratinam S, i-WIP (International Weight Management in Pregnancy) Collaborative Group. Dietary interventions in overweight and obese pregnant women: a systematic review of the content, delivery, and outcomes of randomized controlled trials. *Nutr Rev*. 2016 May;74(5):312-28. doi: 10.1093/nutrit/nuw005

McCarthy EA, Walker SP, Ugoni A, Lappas M, Leong O, Shub A. Self-weighing and simple dietary advice for overweight and obese pregnant women to reduce obstetric complications without impact on quality of life: a randomised controlled trial. *BJOG: An International Journal of Obstetrics and Gynaecology* 2016;123:965-973

Rogozińska E, D'Amico MI, Khan KS, Cecatti JG, Teede H, Yeo S, Vinter CA, Rayanagoudar G, Barakat R, Perales M, Dodd JM, Devlieger R, Bogaerts A, van Poppel MN, Haakstad L, Shen GX, Shub A, Luoto R, Kinnunen TI, Phelan S, Poston L, Scudeller TT, El Beltagy N, Stafne SN, Tonstad S, Geiker NR, Ruifrok AE, Mol BW, Coomarasamy A, Thangaratinam S, International Weight Management in Pregnancy (iWIP) Collaborative Group. Development of composite outcomes for individual patient data (IPD) meta-analysis on the effects of diet and lifestyle in pregnancy: a Delphi survey. *BJOG*. 2016 Jan;123(2):190-8. doi: 10.1111/1471-0528.13764.



L-R: Dr Elizabeth McCarthy, Dr Alexis Shub and Dr Christine Houlihan



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# Department of Urogynaecology, Mercy Hospital for Women

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The Department of Urogynaecology is active in research that will advance the assessment and management of conditions affecting women including pelvic floor problems such as uterovaginal prolapse and urinary incontinence.

In 2016 the Urogynecology Society of Australasia awarded a scholarship to Dr Lin Li Ow.

## Projects and grants

*The effects of mode delivery on postpartum sexual function and urinary function: a prospective study. Long-term follow-up*

A De Souza, P Dwyer, L Schierlitz

Norman Beischer Medical Research Foundation

*Randomised prospective trial of TVT sling to mini-sling in women with intrinsic sphincter urinary stress incontinence*

P Dwyer

Mercy Health Foundation

*Bilateral extraperitoneal uterosacral vaginal vault suspension: long term retrospective audit*

D Karmakar, P Dwyer

*Comparison of two standard-of-care techniques for stress urinary incontinence*

D Karmakar, P Dwyer, C Murray

*Pilot project to develop a patient reported scale for emptying of bladder after pelvic floor surgery*

D Karmakar, Y Lim, P Dwyer, E Thomas.

Ow LL, Lim YN, Dwyer PL, Karmakar D, Murray C, Thomas E, Rosamilia A. Native tissue repair or transvaginal mesh for recurrent vaginal prolapse: what are the long-term outcomes? *Int Urogynecol J.* 2016 27(9):1313-20

Dwyer PL, Riss P. Synthetic mesh in pelvic reconstructive surgery: an ongoing saga. *Int Urogynecol J* 2016; 27(9):1287-8

Dwyer PL. My mentors in urogynecology. *Int Urogynecol J.* 2016 Oct 13

Dwyer PL, Riss P. Peter L. Dwyer and Paul Riss - Joint Editors-in-Chief 2011-2016. *Int Urogynecol J.* 2016 Oct 13

Karmakar D, Dwyer PL. Failure of Expectations in Vaginal Surgery: Lack of Appropriate Consent, Goals and Expectations of Surgery. *Curr Urol Rep.* 2016 Dec; 17(12):87

Lim YN, Dwyer P, Murray C, Karmakar D, Rosamilia A, Thomas E. Long-term outcomes of intravesical dimethyl sulfoxide/heparin/hydrocortisone therapy for interstitial cystitis/bladder pain syndrome. *Int Urogynecol J.* 2016 Dec 16

Nikpoor P. UGSA: Highlights of the 2016 ASM. *O&G Magazine.* 2016. Vol 18 (3): 66-67

Young N, Rosamilia A, Arkwright J, Lee J, Davies-Tuck M, Melendez J, Werkmeister J, Gargett C. Vaginal wall weakness in parous ewes; a potential preclinical model of pelvic organ prolapses. *Int Urogynecol J Pelvic Floor Dysfunct* 2016 doi:10.1007/s00192-016-3206-2

## Publications

Goldman HB, Dwyer PL. Polypropylene mesh slings and cancer: An incidental finding or association? *Int Urogynecol J.* 2016;27(3):345-6

Ow LL, Walsh CE, Rajamaheswari N, Dwyer PL. Technique of extraperitoneal uterosacral ligament suspension for apical suspension. *Int Urogynecol J.* 2016 27(4):637-9

Dwyer P, Riss P. Times are a changing for the IUJ. *Int Urogynecol J.* 2016; 27(5):685

Lose G, Dwyer PL, Riss P. The standardization of urodynamic reporting in the International Urogynecology Journal. *Int Urogynecol J.* 2016; 27(7):979-80

## Presentations

Sultan A, Monga A, Lee J, Emmanuel A, Norton C, Santoro G, Hull T, Berghmans B, Brody S, Haylen B. An International Urogynecological Association (IUGA) – International Continence Society (ICS) Joint report on the terminology for female anorectal dysfunction. *Int Urogynecol J Pelvic Floor Dysfunct* 2016; doi:10.1007/s00192-016-3140-3 PMID NeuroUrol Urodyn 2016; doi:10.1002/nau.23055 PMID

Ow LL, Lee JK. Management of bladder dysfunction and LUTs during pregnancy – tips & tricks. *Current Bladder Dysfunction Report* 2015; 10(3): 308-312 doi: 10.1007/s11884-015-0314-7.

Dwyer PL. Complications of surgery workshop. How to publish in Urogynecology. Workshops. International Urogynecological Association Annual Scientific Meeting Cape Town South Africa 2016

Lee J, Rosamilia A, Dwyer PL, Lim YN, Young NR, Thomas EA, Murray CJ, Leitch A. Minarc Monarc Suburethral Sling in Women with Stress Urinary Incontinence – an RCT 48M follow-up. International Urogynecological Association Annual Scientific Meeting Cape Town South Africa 2016

Walsh CE, Dwyer PL, Rosamilia A, Murray C, Thomas EA, Hiscock R, Schierlitz L. A Randomised Controlled Trial Comparing Pelvic Organ Prolapse Surgery with and without tension-free vaginal tape in women with occult or asymptomatic urodynamic stress incontinence: 6-year follow-up. International Urogynecological Association Annual Scientific Meeting Cape Town South Africa 2016.



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# Department of Gynaecology, Mercy Hospital for Women

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The Department of Gynaecology provides consultancy for women experiencing menopause, menstrual difficulties, acute or chronic pelvic pain, hormonal disorders, prolapse, vulval disorders and infertility, and is active in researching ways to improve their health.

In 2016 Professor Sonia Grover was invited to take the role of visiting professor to the University of Hong Kong – Queen Mary Hospital, to assist in developing paediatric and adolescent gynaecology services.

## Project

### *Persistent Pelvic Pain Project*

S Mooney, M Sewell, K Mirowski-Allen,  
P Maher, S Grover.

## Publications

Eggers S, Sadedin S, van den Bergen JA, Robevska G, Ohnesorg T, Grover SR. Disorders of sex development: insights from targeted gene sequencing of a large international patient cohort. *Genome Biology*. 2016 17 (1), 243 IF 11.313

Tucker EJ, Grover SR, Bachelot A, Touraine P, Sinclair AH. Premature Ovarian Insufficiency: New perspectives on genetic cause and phenotypic spectrum. *Endocr Rev*. 2016 Oct 3. [Epub ahead of print] IF 14.9

Jayasinghe YL, Sasongko V, Lim RW, Grover SR, Tabrizi SN, Moore EE, Donath S, Garland SM. The Association Between Unwanted Sexual Experiences and Early-Onset Cervical Cancer and Precancer by Age 25: A Case-Control Study. *J Womens Health (Larchmt)*. 2016 Nov 17. [Epub ahead of print] IF 2.032

Tracy J, Grover S, Macgibbon S. Menstrual issues for women with intellectual disability. *Aust Prescr*. 2016; 39(2):54-7. Review.

Morris S, Grover S, Sabin MA. What does a diagnostic label of 'polycystic ovary syndrome' really mean in adolescence? A review of current practice recommendations. *Clin Obes*. 2016 Feb;6(1):1-18. Review.

## Abstracts

5th Asian Congress on Endometriosis  
Osaka Japan October 2016

Abu Bakar M, Ong YC, Grover SR.  
Adolescent Dysmenorrhoea: Findings and management in a tertiary paediatric hospital with 10-15 year longterm followup

5th Asian Congress on Endometriosis  
Osaka Japan October 2016

Mellor A, Grover SR. Juvenile cystic adenomyosis: Should this be known as "Accessory uterine cavity" as evidence suggests it is a Müllerian anomaly

FIGIJ World Congress Paediatric and Adolescent Gynaecology Florence June 2016  
Morris S, Sabin MA, Grover SR. Experience of diagnosing PCOS in adolescents at RCH

FIGIJ World Congress Paediatric and Adolescent Gynaecology Florence June 2016  
Morris S, Sabin, Grover SR. Should we be diagnosing PCOS in adolescents: a review of the literature

FIGIJ World Congress Paediatric and Adolescent Gynaecology Florence June 2016  
Chan K, Grover SR. Insertion and removal rates of levonorgestrel IUS – are there predictors for removal?

FIGIJ World Congress Paediatric and Adolescent Gynaecology Florence June 2016  
Musarra M, Sivapatham L, Grover SR. Myths and misconceptions regarding the ocp – how parental knowledge influences the use of the ocp in teenage daughters



FIGIJ World Congress Paediatric and Adolescent Gynaecology Florence June 2016  
Knox B, Villegas R, Grover SR. Is it time to rethink the traditional thinking about adenomyosis?  
Best poster

FIGIJ World Congress Paediatric and Adolescent Gynaecology Florence June 2016  
Sivapatham L, Grover SR. Uterine didelphys, unilateral renal agenesis and obstructed vagina: presentations in a cohort of 35 women

European Paediatric Urology Congress UK June 2016  
Morris A, Bogdanský M, Heloury Y, Grover SR. Outcomes following genitoplasty for CAH

North American Society of Pediatric and Adolescent Gynecology Vancouver April 2016  
Keilly M, Grover SR. Vulvodynia in premenarchal girls: a case series

Society for Reproductive Investigation Montreal, March 2016  
Girling JE, Hawthorne SCJ, Marino JL, Nur Azurah AG, Grover SR, Jayasinghe YK. Menstrual Concerns in Young Women: The Father's Perspective

Australian Pain Society Perth March 2016  
Sewell MA, Mooney S, Churnilov L, Ma T, Maher P, Grover SR. Persistent pelvic pain – pain catastrophisation, pelvic pain and quality of life

Australian Pain Society Perth March 2016  
Mirowski-Allen K, Sewell MA, Mooney S, Ma T, Maher P, Grover SR. Persistent pelvic pain – predictors of surgical intervention.

## Presentations

Grover SR. Management of Vaginal agenesis – a modern view. University of Hong Kong – Queen Mary Hospital Assisted reproduction program 30th Anniversary celebration symposium Hong Kong December 2016

Grover SR. Disorders of Sex Development: what the general gynaecologist needs to know. HKU-QMH Assisted reproduction program 30th Anniversary celebration symposium Shenzhen December 2016

Grover SR. HPV vaccination. Chinese Paediatric and adolescent gynaecology meeting Hungzhou November 2016

Grover SR. Premature ovarian insufficiency in adolescents. First Malaysian Advances in Women's Health Congress Serambam, Malaysia November 2016

Grover SR. Sexuality and the XY woman. World Congress in Paediatric and Adolescent Gynaecology Florence June 2016

Grover SR. Congenital anomalies and cervical agenesis. Chilean Society of Paediatric and Adolescent Gynaecology, Santiago Chile May 2016

Grover SR. Outcomes of feminising surgery for ambiguous genitalia. Chilean Society of Paediatric and Adolescent Gynaecology, Santiago Chile May 2016

Grover SR. Polycystic ovaries in adolescents. Gynaecology Ultrasound Melbourne April 2016

Grover SR. Congenital anomalies. Gynaecology Ultrasound Melbourne April 2016.

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# Department of Gynaecological Oncology, Mercy Hospital for Women

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The Department of Gynaecological Oncology is involved in many research projects within Mercy Hospital for Women, and collaborates in local, national and international studies. Its members are represented on national and international research advisory boards that are instrumental in developing future projects to advance care in gynaecological cancer.

The department also continues to provide multidisciplinary care to an increasing number of women throughout their entire care pathway. This focus on clinical research enables women managed within the department to trial new therapies as part of their ongoing treatment.

## The 2016 research team includes:

### **Gynaecological oncology**

Associate Professor David Allen, Associate Professor Peter Grant, Dr Simon Hyde, Dr Julie Lamont

### **Medical oncology**

Dr George Au Yeung, Dr Serene Foo, Associate Professor Linda Milishkin

### **Radiation oncology**

Dr David Bernshaw, Dr Pearly Khaw, Dr Carminia Lapuz, Dr Adeline Lim

### **Clinical trials**

Kelly Jean.

## Projects and grants

*Ovarian Cancer Prognosis and Lifestyle Study (OPAL)*

P Webb, M Friedlander, P Grant,  
A Obermair, A deFazio  
NHMRC

*PARAGON – Phase 2 study of aromatase inhibitors in women with potentially hormone responsive recurrent/metastatic gynaecological neoplasms:*

*ANZGOG 0903*  
P Grant

*ARIEL 2. A Phase 2, Open-Label Study of Rucaparib in Patients with Platinum-Sensitive, Relapsed, High-Grade Epithelial Ovarian, Fallopian Tube, or Primary Peritoneal Cancer*  
P Grant, L Milishkin, D Rischin, S Hyde,  
J Lamont, D Allen, S Foo

*CASCADE. A cancer tissue collection after death (cascade) programme to improve our understanding of the progression from primary stage cancer to metastatic disease*  
D Bowtell, P Grant, J Lamont, S Hyde

*SOLO 1. Phase 3 randomised trial of Olaparib vs placebo as maintenance treatment in patients with BRCA mutated advanced ovarian cancer following primary chemotherapy*

P Grant, D Allen, S Hyde, J Lamont, L Milishkin,  
D Rischin, S Foo, G Au-Yeung

*SOLO 2. Phase 3 randomised trial of Olaparib vs placebo in platinum sensitive relapsed BRCA mutated ovarian cancer*

P Grant, D Allen, S Hyde, J Lamont, L Milishkin,  
D Rischin, S Foo, G Au-Yeung.

## Publications

Poon C, Hyde S, Grant P, Newman M, Ireland-Jenkin K. Incidence and Characteristics of Unsuspected Neoplasia Discovered in High-Risk Women Undergoing Risk Reductive Bilateral Salpingo-oophorectomy. *Int J Gynecol Cancer* 2016 Oct;26(8):1415-20

Pharoah PD, Song H, Dicks E, Intermaggio MP, Harrington P, Baynes C, Alsop K, Australian Ovarian Cancer Study Group et al. PPM1D Mosaic Truncating Variants in Ovarian Cancer Cases May Be Treatment-Related Somatic Mutations. *J Natl Cancer Inst.* 2016 Jan 27;108(3)

Van Barneveld E, Allen DG, Bekkers RLM, Grant PT. Lymphovascular space invasion in early-stage endometrial cancer: adjuvant treatment and patterns of recurrence. *South Afr J Gynaecol Oncol* 2016; 8(1):18-23.





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# Department of Endosurgery, Mercy Hospital for Women

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The Department of Endosurgery provides expertise in the practice of minimal access surgery in gynaecology.

A Fellowship Program instituted in 1995 aims to improve surgical skills in laparoscopic and hysteroscopic surgery.

The department has two divisions: Endosurgery A, led by Professor Peter Maher, focusing on patients with symptoms of pelvic pain and endometriosis; and Endosurgery B, led by Dr Emma Readman, with a focus on menstrual irregularities and heavy menstrual bleeding.

In 2016, the department had almost 3,500 clinic appointments of which almost 50 per cent were new referrals, 215 were outpatient hysteroscopies and more than 650 were surgical operations.

## Projects

*Is whole genome sequencing going to save the morcellator?*

P Chowdary, K Stone, L Ellett, D Munro, M Pertile, E Readman, P Cohen, P Maher

*Perineal cysts and abscesses: a review of classification systems and management options*

P Chowdary, L Ellet, P Maher

*The use of a multimedia module to aid the informed consent process in junior doctors consenting patients for laparoscopic surgery – a pilot study*

P Maher

*Retrospective imaging review of patients with severe endometriosis and suspected bowel involvement and the development of a e-scoring system to predict those requiring bowel resection.*

A Brusic, S Esler, P Chowdary, M Sleeman, E Readman, L Ellett, P Maher, N Yang.

## Publication

Jagasia N, Ellett L, Mcllwaine K, Cameron M, Readman E, Elser S, Yang N, Brower R, Maher P. Pre-operative Magnetic Resonance Imaging for Detection of Bowel Involvement in Patients with Deep Infiltrating Endometriosis – Does timing of Menstrual Cycle Make a Difference? A Pilot Study. *Journal of Gynaecology and Obstetrics*. December 2016.

## Presentations

Ma T, Ellett L, Eskander A, Mcllwaine K, Manwaring J, Readman E, Maher P. Can Narrowband Imaging Improve the Laparoscopic Identification of Superficial Endometriosis? AGES XXVI Annual Scientific Meeting 2016 'The Modern Woman', Brisbane 2-5 Mar 2016

Ma T, Ellett L, Eskander A, Mcllwaine K, Manwaring J, Readman E, Maher P. Can Narrowband Imaging Improve the Laparoscopic Identification of Superficial Endometriosis? 45th AAGL Global Congress on Minimally Invasive Gynecologic Surgery, Orlando 14-18 Nov 2016



Chowdary C, Buckley B, McDougall J. The Management of Obstetric Haemorrhage with Internal Iliac Balloon Catheters Secondary to Abnormal Placentation: A Prospective Cohort Study. AGES XXVI Annual Scientific Meeting 2016 'The Modern Woman', Brisbane 2-5 Mar 2016

Chowdary C, Baumann M. Systematic Review of Self Retaining Retractors and Complications of Femoral Neuropathy with Open Abdominal Surgery. AGES XXVI Annual Scientific Meeting 2016 'The Modern Woman', Brisbane 2-5 Mar 2016

Ma T, Ward M, Ellett L, McIlwaine K, Manwaring J, Readman E, Stone K, Maher P. The Role of Endometriosis Specific Ultrasound in Pre-Operative Planning. AGES XXVI Annual Scientific Meeting 2016 'The Modern Woman', Brisbane 2-5 Mar 2016

Chowdary C, Stone K, Readman E, Druitt M, Ma T, McIlwaine K, Ellett L, Cameron M, Maher P. Multicentre retrospective study to assess diagnostic accuracy of ultrasound for superficial endometriosis – are we any closer? ACE2016 5th Asian Conference on Endometriosis, Osaka, Japan 22-26 September 2016

Chowdary P, Burling M, Maher P, Readman E, Van De Weijer P, Tan A. Effect of warm humidified carbon dioxide on oxygenation levels on open abdominal surgery – a pilot investigation. Surgical Humidification Symposium, Auckland 2016

Chowdary C, Stone K, Readman E, Druitt M, Ma T, McIlwaine K, Ellett L, Cameron M, Maher P. Multicentre retrospective study to assess diagnostic accuracy of ultrasound for superficial endometriosis – are we any closer? ISUOG World Congress, Rome 2016

Readman E. Outpatient hysteroscopy, from conception to realisation. ISGE Bali 2016

Readman E. Outpatient hysteroscopy – setting up and indicators for an outpatient hysteroscopy service. ISGE Bali 2016

Readman E. Complications in outpatient hysteroscopy service. ISGE Bali 2016

Maher P. Invited faculty, Endometriosis surgery for DIE. How much is too much? ISGE Croatia 2016

Maher P. Are we too aggressive in our surgical approach to DIE? Peak Conference in Gynecological Minimally Invasive Surgery, Beijing 2016

Maher P. Debate. Preoperative investigation for patients undergoing surgery for late stage endometriosis. Endometriosis surgery, how much and in whom? ISGE Bali 2016

Maher P. Laparoscopic myomectomy – indications, technique and its potential for extinction. Taiwan Association for Minimally Invasive Gynaecology. Invited faculty – Taiwan 2016.

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# Midwifery Professorial Unit, Mercy Hospital for Women and La Trobe University

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The Mercy Hospital for Women Professional Development and Research Unit and the La Trobe University Professorial Unit collaborate to promote an environment of learning through clinical training and research, leading to a highly skilled and knowledgeable workforce.

In September 2016 Tegan Bassett presented a poster at the IPAC conference in Sydney on *Documentation in Birthing Services: A Track and Trigger indicator on the Partogram*, a project run by Andrea Dodd, Tegan Bassett, Monique Johnson and Professor Susan McDonald.

## Projects and grants

*Centre for Research Excellence in Stillbirth  
(The Stillbirth CRE)*

V Flenady, D Elwood, P Middleton, J Morris, E Wallace, S Kumar, F Boyle, G Gardener, V Clifton, E Callender, SJ McDonald, A Wojcieszek, T Wilson, VS Vlack, A Kent, J Oats, Y Khong  
NHMRC

*Obstetric Triage Decision Aid*

M McCarthy, S Simmons, SJ McDonald,  
W Pollock, S Olivier  
Better Care Victoria

*Quality of information and psychological  
support for women who present to Werribee  
Mercy Hospital and Mercy Hospital for Women  
emergency departments (EDs) following early  
pregnancy loss*

M McCarthy, SJ McDonald  
Mercy Health Academic Research Fund

*Development of National Practice  
Standards for Midwives*

C Nagle, M Heartfield, SJ McDonald, et al.  
ANMAC

*Prevention of infection in neonates*  
J Taylor

*Roles and Expectations of 1st time fathers  
during labour and birth*  
S Bowman

*Risk factors and trends in postpartum  
haemorrhage (PPH) in Victoria 2003-2011:*

*Health policy implications*  
M Flood

*Decision-making around family planning  
in Timor Leste*

H Wallace

*Intimate partner violence and admission  
to ICU during pregnancy*

B Quintanilla

*Labour pain*

L Whitburn.

## Publications

Bardien N, Whitehead C, Tong S, Ugoni A, McDonald S, Walker SP. Placental Insufficiency in Fetuses That Slow In Growth But Are Born Appropriate For Gestational Age: A Prospective Longitudinal Study. *Plos ONE* 11(1): e0142788. doi:10.1371/journal

Flood M, Davey M-A, McDonald SJ, Pollock W. Trams, trains, planes and automobiles: logistics of conducting a state-wide audit of medical records. *Aust NZ J Public Health*. 2016; Online; doi: 10.1111/1753-6405.12531.





# Ambulatory, Allied Health and Community Services

We respect the sacredness of the gift of life  
We act with integrity and justice and value each person's dignity

respect

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# Department of Physiotherapy

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The Department of Physiotherapy provides inpatient and outpatient physiotherapy services including assessment, diagnosis, treatment and prevention of disorders of human movement and function. It has a special focus on the neurological, musculoskeletal and cardiovascular systems.

The department is active in advancing women's health management and multidisciplinary health education programs.

## The 2016 research team includes:

Anne Harrison, Physiotherapist

Sarah Veale, Physiotherapist

Praveen Mulinti, Physiotherapist

Andrew Beveridge, Physiotherapist

Alanna Barwood, Physiotherapist

Jessica Kostos, Physiotherapist

Lai Sum Chan, Advance Practice Physiotherapist

Natalie Lim, Dietitian

Chantelle Hutchinson, Speech Pathologist

Janetta Davis, Occupational Therapist

Sharon Jones, Occupational Therapist

Leesa Musarra, Occupational Therapist

Professor Nicholas Taylor

Professor Nora Shields

Associate Professor Helena Frawley.

## Projects and grants

*Attitudes, barriers and enablers to physical activity in pregnant women: a systematic review*

A Harrison, N Taylor, N Shields, H Frawley

*Pain Science Education: An exploratory study of WMH Physiotherapist's knowledge and confidence in providing pain science education: Stage 1*

S Veale

*Safe recovery – falls prevention program*

P Mulinti, A Beveridge

*Improving wait times for antenatal patients requiring physiotherapy*

A Barwood, J Kostos

*Implementation of a Physiotherapy Advanced Scope of Practice model within the Werribee Mercy Hospital Emergency Department*

LS Chan, A Harrison

DHHS

*Dining with friends: an enjoyable mealtime experience in hospital*

N Lim, C Hutchinson

*Increasing the use of occupation based outcome measures in Occupational Therapy: Are we meeting the occupational goals of our consumers?*

J Davis, S Jones, L Musarra

*Improving precision when measuring nutritional additives used to fortify expressed breast milk*  
F Richmond, G Opie, T Arnold, N Harwood, R Cooper, J Slevin

*The establishment of an advanced practice physiotherapy role within the Mercy Hospital for Women urogynaecology clinic*

A Steventon, T Darrer

DHHS





*Introducing the role of occupational therapy and physiotherapy into a community palliative care team*

L Musarra, K Kopelke  
Mercy Palliative Care

*Factors associated with fear of falling in community-dwelling older adults in regional New South Wales*

P Sirr  
NSW Health Education and Training Institute (HETI) through the Rural Research Capacity Building Program.

## Publication

Harrison AL, Shields N, Taylor NF, Frawley HC. Exercise improves glycaemic control in women diagnosed with gestational diabetes: a systematic review. *J Physiotherapy*. 2016; 62: 188-196.

“The department is active in advancing women’s health management and multidisciplinary health education programs.”



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## Anne Harrison, Werribee Mercy Hospital

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Behavioural factors can support or hinder treatment pathways, as physiotherapist Anne Harrison and her team can attest in their clinical work with pregnant women experiencing gestational diabetes. Anne's research is building evidence to explain why patient uptake of recommended lifestyle changes can be challenging, and how exercise can improve outcomes for mothers and babies.

"I am very person-centred in my approach and I'm a problem solver; I want to know why certain things are happening and how we can contribute to better outcomes for our patients," Anne says. "Allied health can bring different perspectives to research as well, both clinical and also a holistic, qualitative understanding of our patients."

"The ultimate aim of my current research is to improve the engagement of women with gestational diabetes mellitus (GDM) to be more physically active in line with current health guidelines and recommendations. This may reduce their health risks and improve outcomes for both the women and their babies."

Anne and her team spoke to dietitians and diabetes educators at Mercy Health and beyond who identified that many of the women they saw after a diagnosis of GDM weren't engaging with the physical activity guidelines as recommended. A subsequent systematic review and analysis by Anne and her co-authors showed that aerobic or resistance exercise, performed at a moderate intensity at least three times a week, safely helps to control blood glucose levels after a meal, fasting blood glucose levels and the longer-term measure of glycated haemoglobin in women diagnosed with GDM.

"That was a very important finding because it provides high-level evidence to support the recommendations that exercise in combination with standard care can assist in controlling blood

glucose levels," Anne says. "According to the literature, poor control of blood glucose levels in GDM can lead to high birth weight babies, birth trauma for mother and baby, and an increased risk of women developing type 2 diabetes later in life. So interventions like adjunctive exercise have the potential for significant short and long-term benefits."

A second systematic review examined pregnant women's attitudes, barriers and enablers towards physical activity, including a subset of those with GDM. It confirmed that while women recognised physical activity was important and beneficial for themselves and their baby, there were barriers to taking action, most of which were intrapersonal. In fact, from the literature it has been reported that as many as 60-80 per cent of pregnant women do not take part in physical activity as recommended.

"Early on in the pregnancy, it might be that the women were feeling nauseous and tired; later on, they might have found it too hard to do weight-bearing exercise. So the stage of pregnancy is another factor and an important consideration when prescribing physical activity interventions."

"The enablers were their desire to improve their health and wellbeing, and the interpersonal or social factors such as support from family and partners. So that's interesting and alludes to the fact that it's really important to work with women individually to tailor programs to fit their personal and social needs."



The review identified a research gap for women with GDM and their attitudes, barriers and enablers to physical activity during pregnancy. Anne's current study (approved by HREC) will provide data emerging directly from the women to help inform future physical activity intervention strategies for these women. Its outcomes could lead to trials to see if the strategies engage women and effectively assist in controlling blood glucose levels.

"I think the psychosocial perspective of health is vital: looking at the whole person and what makes people tick to complement and enhance clinical approaches," Anne says. "Although we can do something clinically, like give patients an exercise to do, it's sometimes not enough: we also need to understand the person from a range of perspectives, so that the solution is realistic for that person."

Anne's work has been supported by Director of Allied Health Meredith Swaby and Program Director Ambulatory, Community and Allied Health Liz Murdoch, both of whom are eager to see allied health research gain greater prominence in conversations about women's health and other clinical areas.

"They've been very encouraging of my efforts to bring something new to the research table that will enrich the work we do. Mercy Health has such a strong culture of innovation and fostering ideas which is really motivating for staff. I've also been very fortunate to have very experienced mentors in La Trobe University professors Nora Shields and Nick Taylor and Monash University researcher Associate Professor Helena Frawley, who are very highly respected allied health researchers.

"I also acknowledge the support from the Federal Government Research Training Program which supports higher degree and doctoral research students such as myself."

“The ultimate aim of my current research is to improve the engagement of women with gestational diabetes mellitus (GDM) to be more physically active in line with current health guidelines and recommendations. This may reduce their health risks and improve outcomes for both the women and their babies.”

Physiotherapist Anne Harrison







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## Peter Sirr, Mercy Health Albury

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It is fear that keeps Mercy Health Albury Gerontological Physiotherapist Peter Sirr up at night: specifically, older people's fear of falling.

Falls and fear of falling are interrelated: if a person is afraid of falling, they might curtail their activity, leading to reduced mobility and physical fitness, and in turn increasing their risk of falling.

Peter has worked as a physiotherapist in the aged care field for seven years and extensively within falls prevention.

His research, *Factors associated with fear of falling in community-dwelling older adults in regional New South Wales*, addressed what he regarded as a missing piece in falls literature.

"I've found a big gap between people falling and people who are really concerned about falling but who are not falling," Peter says.

"For example, one person may have had 100 falls over an 18-month period and they're not concerned at all, they're still climbing ladders – whereas another person who hasn't fallen at all might be so scared of falling they don't leave the house."

Peter's research specifically focussed on older adults in regional New South Wales, a departure from three international fear of falling studies that were based in metropolitan areas.

He collected data from 136 Mercy Health Albury clients; 75 per cent were female and 85 per cent had a history of falls.

Participants were asked to complete questionnaires including the Shortened Falls Efficacy Scale-International; the Multidimensional Scale of Perceived Social Support; and the Depression, Anxiety and Stress Scale. They also undertook a Timed Up and Go Test and a therapist completed a Falls Risk Assessment Tool.

The research revealed four major factors in fear of falling: stress, a high number of medications, a slower Timed Up and Go Test, and a history of falls in the previous 12 months.

Peter hopes his research will pave the way for future studies into the implementation of a more holistic falls prevention program.

Interestingly, the research also found that falls programs can sometimes frighten participants, increasing their fear of falling and in turn their likelihood of falling.

"Current falls prevention programs help from a physical and medical point of view, but they may be causing more problems down the track," Peter says.

"I want to see if we can develop a model that empowers older people, preventing falls while also having a positive psychosocial impact."

“One person may have had 100 falls over an 18-month period and they're not concerned at all, they're still climbing ladders – whereas another person who hasn't fallen at all might be so scared of falling they don't leave the house.”

Gerontological Physiotherapist Peter Sirr



# Surgical and Specialist Services

We strive to create a dynamic environment  
which encourages creativity and diversity

innovation

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# Department of Anaesthesia, Mercy Hospital for Women

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The Department of Anaesthesia provides anaesthetic services for obstetric, gynaecology and neonatal inpatients and day patient surgery at Mercy Hospital for Women.

A recognised leader in the field of obstetrics anaesthesia, the department's staff are actively involved in specialty research. Undergraduate and postgraduate training and teaching is conducted in conjunction with the University of Melbourne.

## The 2016 research team includes:

Clinical Associate Professor Scott Simmons

Dr Heidi Liesegang

Dr Richard Hiscock

Dr Jennifer Fu

Dr Sajidah Ilyas

Dr Eoin Casey

Dr Siaghal MacColgain

Dr Leandro Cardoso

Dr Gillian Paulsen

Dr Ian Letson

Dr James McGuire

Dr Heather Loane

Dr Patricia Newell

Dr Andrew Iliov.

## Projects

*Failed conversion of labour epidural analgesia for anaesthesia – Audit*

S Simmons, H Liesegang, R Hiscock, J Fu

*Anaesthetic management and role of Sugammadex in a patient with Churg-Strauss Syndrome – Case Study*

S Simmons, H Liesegang, R Hiscock, J Fu

*Transthoracic echocardiographic assessment of cardiac output in healthy women at elective caesarean section under spinal anaesthesia with Ephedrine and Metaraminol hypotension prophylaxis: An observational cohort study*

S Simmons, R Hiscock, S Ilyas, E Casey, S MacColgain, L Cardoso

*Clinical Audit of epidural labour analgesia – 10 years' experience from 2006 to 2015*

S Simmons, R Hiscock

*Clinical Audit of Category 1 including Code Green Caesarean Sections at Mercy Hospital for Women from 2011 to 2015*

S Simmons, R Hiscock, G Paulsen, S MacColgain

*General Anaesthesia for Caesarean Section at Mercy Hospital for Women 2015*

I Letson, S Simmons, J McGuire

*Assessment of normal parturient coagulation profile using the ROTEM analyser*

S Simmons, R Hiscock, A Iliov

*Management of ectopic pregnancies requiring surgical care – a 3 year audit*

S Simmons, H Loane

*Pregabalin for the management of post-dural puncture headache after unintentional dural puncture in obstetrics patients: A randomised, double-blind, placebo – controlled trial*

S Simmons, P Newell.



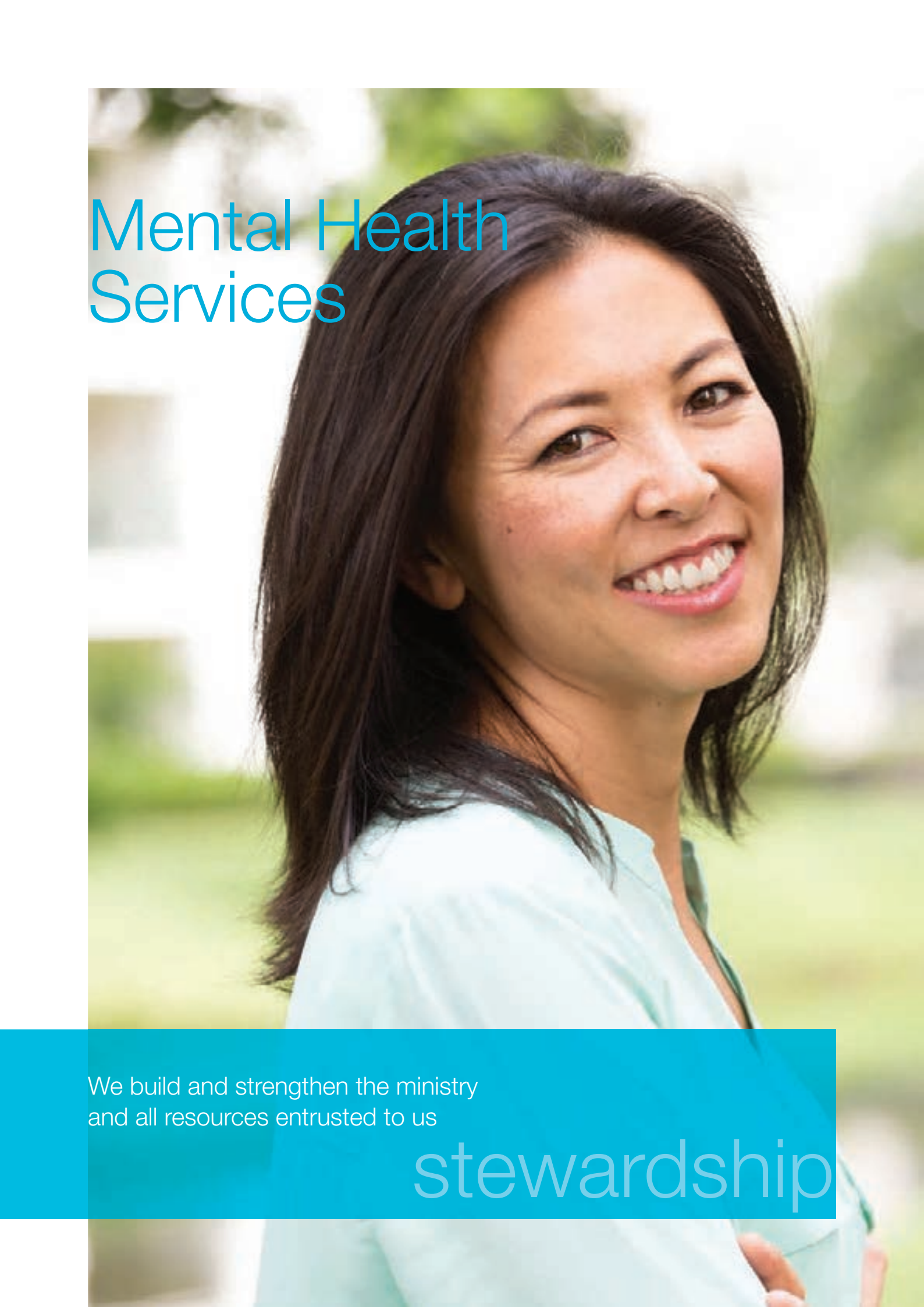


## Publication

Dean M, Ramsay R, Heriot A, Mackay J, Hiscock R, Lynch C. Warmed, humidified CO2 insufflation benefits intraoperative core temperature during laparoscopic surgery: A meta-analysis. *Asian Journal of Endoscopic Surgery*. 2016.

## Presentation

Failed conversion of labour epidural analgesia for anaesthesia – Audit. *Australian and New Zealand College of anaesthetists 2016 Annual Scientific Meeting (ANZCA 2016 ASM)*.



# Mental Health Services

We build and strengthen the ministry  
and all resources entrusted to us

stewardship



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# Department of Perinatal Mental Health, Mercy Hospital for Women

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The Department of Perinatal Mental Health supports women and their families through mental health assessments; liaises with services including clinical psychology and psychiatry; provides education and professional development for clinicians; and undertakes research.

The department runs the Mercy Health Pregnancy and Emotional Wellbeing Study (MPEWS), a prospective, longitudinal study of women from pregnancy to 36 months postpartum that includes diagnostic measures of maternal mental health, observational measures of the mother-infant relationship, measures of child development and repeat biological sampling.

The study was established to provide a comprehensive investigation of early developmental mechanisms and modifiers for maternal, fetal and child emotional wellbeing.

## Project

*Mercy Pregnancy and Emotional Wellbeing Study (MPEWS): Understanding maternal mental health, fetal programming and child development*

M Galbally, M van IJzendoorn, M Permezel,  
R Saffery, M Lappas, J Ryan, E van Rossum,  
AR Johnson, D Teti, AJ Lewis.







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# University of Notre Dame, Melbourne Clinical School

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## Mercy Health collaborative research

The research program at the Melbourne Clinical School is led by Associate Dean and Chair of Health Innovation, Professor Moyez Jiwa. The University of Notre Dame Australia is currently transitioning its medicine degree from the MBBS to a Doctor of Medicine (MD). Current students may be enrolled in either course. Student research projects in the MBBS course are elective and part of an Honours program. Students enrolled in the MD course are required to complete a research component as part of their degree. As the university transitions to full capacity in the MD program there will be an increasing opportunity to conduct more collaborative research projects.

Research activities at the Melbourne Clinical School are coordinated by Dr Catherine Krejany at the Melbourne Clinical School research office. Catherine has a strong background in medical research and coordinates and supervises student research projects as well as wider research activity at the Melbourne Clinical School.

The University of Notre Dame was involved in a number of collaborative research projects with Mercy Health in 2016. These projects were conducted at Werribee Mercy Hospital under the supervision of on-site tutors who are staff members of Mercy Health.







## MD tutors

Mercy Health staff who act as tutors for students in the MD program are inducted. Tutors are provided a tutor guide as part of this process. Details of expectations and timelines for supervision are stated in the tutor guide.

The following Mercy Health staff are currently acting as tutors for students completing an MD project:

Dr Jonathan Darby

Associate Professor Shaukat Esufali

Dr John Pasco

Dr Jacqueline Van Dam.

Additional Mercy Health staff have been invited to become tutors and will be inducted later in the year. Melbourne Clinical School research staff have supported research by Mercy Health staff in 2016; two projects were conducted at Werribee Mercy Hospital as part of the MBBS Honours program.

## Projects

*Is there a wealth to work absenteeism correlation?  
The influence of local and national economic prosperity on the incidence of sickness absence in the Wyndham locale*

M Jiwa, C Krejany, H Cull

*The impact of photoaging intervention on promoting smoking cessation among pregnant women or in postpartum women who are not breastfeeding*

M Jiwa, J Van Dam

*Patterns of paediatric presentation and referral: a retrospective analysis*

M Jiwa, C Krejany, J Pasco

*Can photoaging technology promote smoking cessation in an athletic young adult population*

M Jiwa, C Krejany

*What factors facilitate dying at home for patients with terminal illness in an outer metropolitan Australian setting?*

M Jiwa, E Kanjo, W Bong.

## Completed projects 2016 (MBBS Honours students)

*Are junior doctors over-investigating patients with non-specific symptoms at their first presentation?*

M Jiwa, J Pasco

*A pilot randomised trial to evaluate the effect size of photoaging technology as a trigger for smoking cessation in hospitalised patients*

M Jiwa, J Darby.







# Aged Care

An elderly woman with short, wavy, light brown hair is smiling at the camera. She is wearing a light beige, textured cardigan over a grey turtleneck sweater. She is holding a small, dark-handled tool, possibly a trowel, and is working in a large, grey, oval-shaped planter. The planter is filled with dark soil and some green plants. In the background, there is a white metal fence, lush green bushes, and a building with a red-tiled roof and a covered porch. Two hanging planters with green plants are visible on the porch. The scene is outdoors, and the lighting suggests it is daytime.

We work together to progress the Mercy mission

teamwork

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# Future directions: Mercy Health aged care research

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Mercy Health is a proud member of the Melbourne Ageing Research Collaboration (MARC), a consortium of partners from research, universities, health services, community, government, advocacy organisations and industry sectors aiming to improve the lives of older people through translational research. We have also established a translational research partnership with Australian Catholic University's Institute for Health & Ageing and the University of Notre Dame Australia with the aim of achieving a better quality of life for Australia's ageing population.

Below is an overview of key research projects in which Mercy Health Aged Care is participating over coming years.

## Improving pain management amongst patients with dementia

### Collaboration with Curtin University

#### Funded by EPAT Technologies Ltd

People with moderate-to-severe dementia lose their ability to tell their family members and caregivers that they are in pain.

Curtin University has produced the world's first mobile application (app) for point-of-care pain assessment, incorporating facial recognition technology. Known as the electronic Pain Assessment Tool (ePAT), the app uses cameras in smart devices to capture short videos, which are then analysed in real-time for the presence of facial expressions associated with pain.

A validation study to test the app's efficacy in assessing pain in people with dementia is being conducted in aged care homes. All participants will be assessed for pain using two instruments: the Abbey Pain Scale (APS), a standard pain assessment tool for people with dementia; and the ePAT.

The application promises more timely and precise assessment of pain, allowing interventions to be offered to residents living with dementia.

## Analgesic medication to modify behavioural and psychological symptoms of dementia

### Collaboration with National Ageing Research Institute (NARI)

#### Funded by the National Health and Medical Research Council

Managing the behavioural and psychological symptoms of dementia is an ongoing challenge in residential aged care. Current treatments often focus on suppressing behaviours rather than addressing triggers. A common trigger is unrelieved pain, often poorly treated due to difficulties in assessing residents who have lost verbal communication skills. Preliminary evidence shows pain relief can reduce aggression and agitation in people with dementia.

This research project seeks to evaluate whether regular and effective administration of pain relief medications can reduce the frequency of agitation and aggression.

Outcomes will help guide future clinical practice in treating pain-related aggression and agitation, contribute to improved quality of life for people with dementia and reduce stress in aged care staff, neighbouring residents and visiting family members.



## RedUSE project – Reducing the use of sedative medication in aged care facilities

**Collaboration with  
University of Tasmania**

**Funded by the  
Department of Health as part of the  
Dementia and Aged Care Service Fund**

Research has consistently shown that the use of sedatives (predominantly antipsychotic and benzodiazepine medication) in many aged care homes is excessively high. These medications are associated with significant adverse effects such as falls, confusion, daytime drowsiness and increased risk of stroke and death.

RedUSE was first trialled in Tasmania in 2008. The six-month intervention project involves a clinical audit of sedative use, staff education on appropriate sedative use and a dedicated sedative review process where nurse input is key.

In 2013, the Department of Health funded a national expansion of the project that included collaborating with the National Prescribing Service MedicineWise and the Pharmaceutical Society of Australia. Five Mercy Health residential aged care homes in Victoria participated in the study from late 2015. The project achieved overall reductions of 13 per cent and 21 per cent in antipsychotic and benzodiazepine use, respectively. When residents taking sedative medication were tracked over the six-month project, over 40 per cent had their doses reduced or stopped completely.

An application has been submitted with Mercy Health to deliver the project to additional homes, with increased training on alternative ways to manage sleep disturbance and the behavioural and psychological symptoms of dementia. Outcomes of successfully reducing sedative use with residents should include increased mobility and alertness, decreased falls rate and enhanced quality of life.

## Program to Enhance Adjustment to Residential Care (PEARL)

**Collaboration with  
Australian Catholic University**

**Funded by the  
National Health and Medical Research Council**

The transition to residential aged care is often traumatic and newly admitted residents are at

a heightened risk of experiencing depression. The transition period represents an ideal opportunity for early intervention.

This project is a cluster randomised controlled trial of a psychological intervention consisting of five individual sessions with residents. Staff are supported to tailor care to their unique psychological needs, interests, aptitudes and backgrounds. The sessions aim to support residents' adjustment to permanent residential aged care, improving new residents' quality of life and reducing the severity and incidence of depression.

## Consumer Directed Care in Residential Aged Care

**Collaboration with  
Australian Catholic University**

**Funded by the  
Dementia Collaborative Research Centres  
and Mercy Health Foundation**

Consumer Directed Care (CDC) empowers aged care residents with dementia to choose how their care is delivered, so they can enjoy the best possible quality of life. Currently Australia has no evidence-based training platform to develop or sustain the effective partnership between residents, staff and families on which CDC depends in residential aged care homes.

This project will trial a new training approach for residential aged care staff: the *Resident at the Centre of Care* (RCC) Program. Adopting a knowledge translation focus, RCC is a six-session package targeting CDC principles, leadership and organisational factors.

The project will measure the direct impact of RCC on quality of life and satisfaction with care for residents with dementia. It will also evaluate staff job satisfaction and relationships with residents and the cost-effectiveness of CDC in aged care homes.

Outcomes will be used to help support the effective implementation of CDC across aged care homes.

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# Mercy Health Human Research Ethics Committee

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The Mercy Health Human Research Ethics Committee (HREC) provides ethical oversight of all research proposals involving human participants. The HREC reports to the Mercy Health Board on all research projects, studies and trials undertaken throughout the organisation.

## HREC members 2016

Professor Janis (John) T Ozolins (Chair)

Virginia Bourke

Christine Childs

Diarmid (Derry) Davine

Reverend Hoa Dinh

James Dwyer

Professor Susan McDonald

Adjunct Professor Linda Mellors

Reverend Cormac Nagle OFM

Tim O'Leary

Associate Professor David O'Neal

Professor Michael Permezel

Susan Phillips

Professor Peter Rendell

Professor Stephen Tong

Julia Trimboli

Professor Sue Walker

Dr Andrew Watkins.

# Projects approved by Mercy Health Human Research Ethics Committee 2016

| Project title                                                                                                                                                                                                                                     | Principal investigator(s)                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| R15/43: A Cancer Tissue Collection After Death (CASCADE) programme to improve our understanding of the progression from Primary stage Cancer to Metastatic Disease                                                                                | Associate Professor David Bowtell, Peter MacCallum Cancer Centre and Associate Professor Peter Grant, Mercy Hospital for Women |
| R15/42: Transthoracic echocardiographic assessment of cardiac output in healthy women at elective caesarean section under spinal anaesthesia with an ephedrine, metaraminol combination as hypotension prophylaxis. An observational cohort study | Clinical Associate Professor Scott Simmons, Head of Anaesthesia Department                                                     |
| R15/46: Retrospective review of surgery for rectovaginal and vesicovaginal fistulas with quality of life and symptom follow up                                                                                                                    | Dr Caroline Walsh, Urogynaecology Fellow, Mercy Hospital for Women                                                             |
| R15/50AC: Improving Pain Management amongst Patients with Dementia                                                                                                                                                                                | Professor Jeff Hughes, School of Pharmacy, Curtin University, WA                                                               |
| R16/01P: What factors facilitate dying at home for patients with terminal illness in an Outer Metropolitan Australian setting?                                                                                                                    | Dr William Bong, Palliative Care Registrar, Mercy Health                                                                       |
| R16/05: RCT of Post-Hysterectomy Vaginal Vault Prolapse Treatment with either Vaginal Uterosacral Ligament Mesh Suspension or Sacrocolpopexy (Open/Laparoscopic)                                                                                  | Dr Yik Lim, Consultant Urogynaecologist, Mercy Hospital for Women                                                              |
| R16/06: Mini or Retropubic sling in women with Intrinsic Sphincter Deficiency – A RCT (Mini RISD)                                                                                                                                                 | Dr Lin Li Ow, Urogynaecology Department, Mercy Hospital for Women                                                              |
| R16/18: Comparison of the pharyngeal pressures provided by ventilator CPAP versus bubble CPAP                                                                                                                                                     | Dr James Holberton, Neonatologist, Paediatrics, Mercy Hospital for Women                                                       |
| R16/19: The Lactoferrin Infant Feeding Trial (LIFT Trial)                                                                                                                                                                                         | Professor William Tarnow-Mordi, NHMRC and Dr Clare Collins, Department of Paediatrics, Mercy Hospital for Women                |
| R16/29: Rotational Thromboelastometry (ROTEM) measurement of blood clotting in pregnancy. An Observational pilot study                                                                                                                            | Clinical Associate Professor Scott Simmons, Head of Department of Anaesthesia, Mercy Hospital for Women                        |
| R16/30: A prospective longitudinal analysis of sexual function and the effect of mode of delivery: 5 years post-partum                                                                                                                            | Dr Payam Nikpoor, Urogynaecology Fellow, Mercy Hospital for Women                                                              |



| Project title                                                                                                                                                                        | Principal investigator(s)                                                                                                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| R16/36: Pregabalin for the management of post-dural puncture headache after unintentional dural puncture in obstetric patients: A randomised, double-blind, placebo-controlled trial | Professor Michael Paech, King Edward Memorial Hospital and Royal Perth Hospital, WA and Clinical Associate Professor Scott Simmons, Head of Department of Anaesthesia, Mercy Hospital for Women |
| R16/53AC: PEARL: Program to Enhance the Adjustment to Residential Living                                                                                                             | Professor Marita McCabe and Dr Tanya Davison, Institute for Health and Ageing, Australian Catholic University                                                                                   |
| R15/34: Implementation and evaluation of Maternity Group Practice (MGP) in an Australian tertiary maternity unit                                                                     | Kym Harrison, Clinical Midwife Consultant, Education and Research, Mercy Hospital for Women                                                                                                     |
| R15/49: Macrosomia: A pilot, observational study of body composition and hypoglycaemic risk in newborns                                                                              | Kirsten Dane, Research Midwife, Mercy Hospital for Women                                                                                                                                        |



| Project title                                                                                                                                                                           | Principal investigator(s)                                                                               |
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| R15/51A: Factor associated with fear of falling in Community Dwelling adults 65 years and older in Regional New South Wales                                                             | Peter Sirr, Physiotherapist, Mercy Health Albury                                                        |
| R15/53: Customised, partially customised and non-customised birthweight centiles: which is the best in predicting perinatal adverse outcome and caesarean rates?                        | Dr Isabela dos Anjos Siqueria, OMG Resident                                                             |
| R15/52: Efficacy of early testing for gestational diabetes                                                                                                                              | Dr Alexis Shub, Obstetrician and Medical Specialist, Mercy Hospital for Women                           |
| R15/54: Botulinum toxin A (BOTOX) injection into muscles of pelvic floor as a treatment for chronic pelvic pain secondary to pelvic floor muscular spasm – An audit of Patient Outcomes | Dr Lenore Ellett, Medical Specialist, Department of Endosurgery, Mercy Hospital for Women               |
| R15/55W: Retrospective audit of admission and discharge Beck Depression Inventory and Mother and Child Risk Observation rating scale results to a psychiatric Mother and Baby Unit      | Dr Carolyn Breadon, Perinatal Registrar, Mother Baby Unit Werribee Mercy Hospital                       |
| R16/03: Adherence of obstetric staff to guidelines for early Gestational Diabetes Mellitus testing                                                                                      | Dr Alexis Shub, Obstetrician, Mercy Hospital for Women                                                  |
| R16/07: Clinical audit of epidural labour ward analgesic – 10 years' experience 2006 to 2015                                                                                            | Dr Richard Hiscock, Anaesthetist, Mercy Hospital for Women                                              |
| R16/08: Clinical audit of Category 1 including Code Green caesarean sections at Mercy Hospital for Women from 2011 to 2015                                                              | Clinical Associate Professor Scott Simmons, Head of Department of Anaesthesia, Mercy Hospital for Women |
| R16/09: Trends in prenatal genetic diagnostic procedures at the Mercy Hospital for Women. A retrospective audit of amniocenteses and chorionic villus sampling from 2012 to 2015        | Dr Lisa Hui, Perinatal Fetal Medicine, Mercy Hospital for Women                                         |
| R16/11: The interpretation of ethnicity in an Australian Population of pregnant women                                                                                                   | Elizabeth Lockie, and Professor Sue Walker, Department of Fetal Medicine Mercy Hospital for Women       |
| R16/12: Retrospective review of ultrasound for soft markers of endometriosis                                                                                                            | Dr Prathima Chowdry, Fellow, Endosurgery Unit, Mercy Hospital for Women                                 |
| R16/13: Atypical endometrial hyperplasia – A 10 year audit of treatment and outcomes at Mercy Hospital for Women                                                                        | Dr Charlotte Reddington, Obstetrics and Gynaecology Registrar, Mercy Hospital for Women                 |
| R16/14: The effect of treatment choices for adenocarcinoma in situ and glandular abnormalities on residual disease, progression and recurrence                                          | Johanna Theuws, Medical student, Radboud University, Netherlands                                        |
| R16/15: General Anaesthesia for Caesarean Section at Mercy Hospital for Women – (follow-up of R07-31)                                                                                   | Dr Ian Letson, Anaesthetist, Mercy Hospital for Women                                                   |
| R16/16: Does a different hospital environment influence the test ordering frequency and pattern in premature neonates?                                                                  | Associate Professor Wei Qi Fan, Northern Hospital                                                       |

| Project title                                                                                                                                                                                                                                                                                           | Principal investigator(s)                                                                     |
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| R16/17: A Study of Video Assisted Ophthalmology Training                                                                                                                                                                                                                                                | Associate Professor Deborah Colville, Monash University                                       |
| R16/20: A retrospective audit study of referral patterns, incidence and outcomes of amniocentesis and chorionic villous procedures (fetal diagnostic tests) performed at Mercy Hospital for Women 2010-2015                                                                                             | Dr Elizabeth McCarthy, Medical Specialist and Obstetrician, Mercy Hospital for Women          |
| R16/21: Outcomes of Infants born following Prolonged Premature Rupture of Membranes (PPROM) : A single centre case – control study                                                                                                                                                                      | Dr Ajit Aiyappan, Neonatologist, Mercy Hospital for Women                                     |
| R16/23: Improving identification and management of severe sepsis in the Emergency Department of Mercy Hospital for Women                                                                                                                                                                                | Mary McCarthy, Nurse Unit Manager, Emergency Department, Mercy Hospital for Women             |
| R16/24: Developing potential amniotic fluid biomarkers of fetal brain development after congenital cytomegalovirus infection                                                                                                                                                                            | Dr Lisa Hui, Maternal Fetal Medicine Specialist, Perinatal Medicine, Mercy Hospital for Women |
| R16/25W: A pilot randomised trial to evaluate the effect size of photo-ageing technology as a trigger for smoking cessation in hospitalised patients                                                                                                                                                    | Professor Moyez Jiwa, Associate Dean, Melbourne Clinical School, University of Notre Dame     |
| R16/27W: 2016 VCCC and WCMICS Colorectal Cancer Clinical Audit                                                                                                                                                                                                                                          | Professor Jim Bishop, Victorian Comprehensive Cancer Centre                                   |
| R16/28: Changes in basal insulin requirements during the third trimester in Maternal Type 1 Diabetes                                                                                                                                                                                                    | Dr Michele Bardin, Endocrinology Advanced Trainee, Austin Hospital                            |
| R16/49: Improving how medical students learn obstetric abdominal examination at the Mercy Hospital for Women. Qualitative and semi-quantitative, student, assessor and patients evaluation of current and video-assisted teaching and assessment of students performing obstetric abdominal examination | Dr Elizabeth McCarthy, University of Melbourne, Mercy Hospital for Women                      |
| R16/50: Efficacy of Dexamethasone in the management of malignant small bowel obstruction in patients with advanced ovarian cancer                                                                                                                                                                       | Dr Antonia Jones, Gynaecological Oncology Specialist, Mercy Hospital for Women                |
| R16/51: How common is substantial inter-pregnancy weight gain?                                                                                                                                                                                                                                          | Dr Priya Sumithran, Endocrinologist, Austin Health                                            |
| R16-55: Developing key quality indicators for the management of women with hypertensive diseases in pregnancy                                                                                                                                                                                           | Dr Clare Whitehead, University of Melbourne, Mercy Hospital for Women                         |
| R16/77: Code White at Mercy Hospital for Women – A Three Year Audit (2013-2016)                                                                                                                                                                                                                         | Dr Nick Jegathesan, Department of Anaesthesia, Mercy Hospital for Women                       |
| R16/37W: How are Junior Doctors managing patients with non-acute and non-specific symptoms at their first presentation                                                                                                                                                                                  | Professor Moyez Jiwa, University of Notre Dame                                                |
| R16/60: Identification of risk factors for missed severe intrauterine growth restriction at term at a major tertiary centre                                                                                                                                                                             | Dr Natasha Pritchard, HMO Obstetrics and Gynaecology                                          |



| Project title                                                                                                                                                                                                                           | Principal investigator(s)                                                                                  |
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| R16/10: Evaluation of the INTERGROWTH – 21st birthweight chart in an Australian population. Should clinicians adopt this new prescriptive international chart?                                                                          | Elizabeth Lockie,<br>and Professor Sue Walker,<br>Department of Fetal Medicine<br>Mercy Hospital for Women |
| R16/22W: Short Case Review – Oncology Health Assessment                                                                                                                                                                                 | Joanne Goldsmith,<br>Day Procedure Unit<br>Werribee Mercy Hospital                                         |
| R16/26W: Evaluation of population-based cancer stage at diagnosis for Victorian children and young adults                                                                                                                               | Helen Farrugia,<br>Cancer Council Victoria                                                                 |
| R16/47W: Appendiceal Diverticulitis: A Case report                                                                                                                                                                                      | Associate Professor Shiran Wijeratne,<br>Specialist General Surgeon,<br>Werribee Mercy Hospital            |
| R16/56: A comparison of obstetric and perinatal outcomes in women with pre-gestational diabetic pregnancies in different levels of maternity care in Victoria between 2006 and 2015. (following on from R12/18)                         | Dr Alexis Shub,<br>Department of Perinatal Medicine,<br>Mercy Hospital for Women                           |
| R16/61: Customised growth centiles: Whether un-customised growth charts, charts customised only on maternal height, or charts customised on maternal height and weight best predict the term fetus at risk of intrapartum complications | Dr Natasha Pritchard,<br>HMO Obstetrics and Gynaecology.                                                   |





**Mercy Health**

*Care first*

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Mercy Health acknowledges Aboriginal and Torres Strait Islander Peoples as the first Australians. We acknowledge the diversity of Indigenous Australia. We respectfully recognise Elders both past and present.  
This report was produced on Wurundjeri Country.