Mater Research summary 2012
Welcome

Since our establishment in 1998, we’ve worked closely with Mater clinicians to deliver on our bench to bedside philosophy. Now with more than 200 laboratory and clinical researchers, Mater Research is connecting with hospitals and institutes all over the world to achieve research excellence.

In 2011 we fully realised our goal to integrate research with clinical practice here at Mater. In 2012, this was tested when we continued our collaborative streak and joined forces with the newly-established Translational Research Institute—an Australian-first initiative, bringing together 650 researchers from four of Queensland’s leading institutes. Although this means some of our researchers are essentially further away from the bedside, this has increased our focus to connect with Mater.

In 2012 we also published more than 280 papers in leading clinical and scientific journals, which enable researchers and scientists from all over the world to learn from our discoveries. And of course, we’ve been busy behind the microscope—establishing the first Mater Ovarian Cancer Collaborative and securing important funding and fellowships to tackle cancer prevention and treatment.

We would like to thank the Mater Research Board of Directors, the Sisters of Mercy, Mater and our staff for their support and guidance this year. Without them, we could not have provided the strong research outcomes for our patients and the community.

Prof Ian Zimmer, Chairman, Mater Research Board of Directors
Prof John Prins, Chief Executive Officer/Director, Mater Research

Contents

<table>
<thead>
<tr>
<th>Welcome</th>
<th>01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Performance 2012</td>
<td>02</td>
</tr>
<tr>
<td>Collaborating for stronger research</td>
<td>05</td>
</tr>
<tr>
<td>Tackling ovarian cancer</td>
<td>06</td>
</tr>
<tr>
<td>Mater researcher given funding to make chemotherapy safer</td>
<td>07</td>
</tr>
<tr>
<td>Nature Medicine article</td>
<td>07</td>
</tr>
<tr>
<td>Four year fellowship to curb cancer</td>
<td>08</td>
</tr>
<tr>
<td>All heart</td>
<td>08</td>
</tr>
<tr>
<td>Research excellence</td>
<td>10</td>
</tr>
<tr>
<td>Financials</td>
<td>12</td>
</tr>
<tr>
<td>Publication list</td>
<td>15</td>
</tr>
<tr>
<td>Thank you to donors</td>
<td>36</td>
</tr>
<tr>
<td>Mater Research patents</td>
<td>38</td>
</tr>
<tr>
<td>Mater Research Board</td>
<td>38</td>
</tr>
</tbody>
</table>
Research performance 2012

2012 was another growth year for Mater Research with a record 287 publications in medical and scientific journals and books, up from 204 in 2011.

More than 40 per cent of these publications were in Australian Research Council (ARC) ERA A* or A journals, which are the top class journals internationally. More than 60 per cent of the publications were led by Mater researchers, with the remainder involving Mater researchers collaborating with an extensive network of local, national and international collaborators.

2012 was also a successful year in terms of Mater researchers gaining external research funding, totalling $4.2m in new NHMRC funding.

Together with our improving quality and quantity of publications, Mater Research is now developing a strong national and international reputation for health research.

2012 also saw an influx of new research talent into Mater Research including NHMRC Senior Research Fellow Prof Josephine Forbes (diabetes), A/Prof Andrew Perkins (cancer genomics/haematology), ARC Future Fellow Dr Suyinn Chong (epigenetics in foetal development), NHMRC CDF Fellow A/Prof Geoff Faulkner (cancer, neural and developmental genomics), Dr Jermaine (Jim) Coward (gynaecological cancers/medical oncology), and Dr Allison Pettit (bone immunology and biology). These new recruits have brought new research programs, funding and researchers with them to Mater Research and have already made substantial impacts on our research.
Collaborating for stronger research

Mater Research has a rich history of collaboration, integrating with Mater clinicians on a range of studies. In the past few years the institute has worked especially hard to enmesh its research with Mater’s clinical services to provide better outcomes for patients and the wider community.

Mater Research has taken its collaborative tradition one step further, forming part of the Translational Research Institute (TRI), an industry-leading ‘think tank’ of collaborative minds which launched this year at the Princess Alexandra Hospital.

Led by Professor Ian Frazer, TRI brings together leading minds from Mater Research, The University of Queensland Diamantina Institute, Queensland University of Technology Institute of Health and Biomedical Innovation and Princess Alexandra Hospital Centres for Health Research.

Destined to be one of the largest medical research institutes in the southern hemisphere, TRI was formed to exchange ideas on life-changing therapeutics and treatments and will house an educational facility in the fields of medicine and science. Like Mater Research, TRI is committed to a ‘bench to bedside’ model, enabling collaborative research in which new treatments can be developed and tested by establishing and modelling the genetic and environmental basis of human disease.

Forming part of TRI will further strengthen Mater’s track record for collaboration, and our researchers will share knowledge and expertise with hundreds of researchers under one roof, providing stronger outcomes for research locally, nationally and internationally.

The new Translational Research Institute, located at Woolloongabba, is destined to be one of the largest medical research institutes in the southern hemisphere.
Mater researcher given funding to make chemotherapy safer

About one third of cancer patients suffer from an infection during, or soon after, their chemotherapy. Mater researcher Dr Ingrid Winkler was awarded $360,000 from the Queensland Government to undertake further research into making chemotherapy safer.

The grant will enable Dr Winkler to investigate the complications of chemotherapy which mainly derive from damage to the stem cells in the bone marrow that regenerate blood and immune systems, leaving patients susceptible to infections.

Approximately one third of the 24,000 cancer patients who receive chemotherapy each year suffer from an infection during, or soon after, receiving chemotherapy as a consequence of the immune-suppression linked to treatment. Dr Winkler’s research aims to reduce the side-effects of chemotherapy and help return cancer patients to health faster.

The research is particularly pertinent for patients undergoing repeated rounds of high-dose chemotherapy, or therapies that include cytotoxic drugs from the anthracycline group, as these patients are most at risk of treatment-induced immune suppression leading to infections and treatment-associated death. These include breast, ovarian, small cell lung cancer, lymphomas and sarcoma patients.

In 2011 Dr Winkler was awarded a National Health and Medical Research Council Career Development Award, one of only eight awarded in Australia.

Nature Medicine article

Our biomedical researchers have collaborated with Mater oncologists to find a way to protect healthy cells so chemotherapy only treats cancerous cells. Their findings were published in the internationally-renowned scientific journal Nature Medicine in 2012.

Led by Ingrid Winkler and Jean-Pierre Levesque, and in collaboration with the US biopharmaceutical company, Glycomimetics, this research examines the use of non-toxic drugs to protect patients from many of the side effects of chemotherapy.

Tackling ovarian cancer

Each year 1300 Australian women are diagnosed with ovarian cancer. Two-thirds of these women will die from the disease. These statistics have not changed in 15 years.

To combat this disease, Mater initiated a cross-campus collaborative which includes researchers and clinical staff to help identify better diagnostics, therapeutics and eventually vaccines.

To find out more visit research.mater.org.au

Members of the Mater ovarian cancer research collaborative.
Four year fellowship to curb cancer

Mater Research’s Associate Professor John Hooper has been awarded a prestigious Australian Research Council Future Fellowship worth $820,000 over four years to research new approaches to treat aggressive tumours.

Collaborating with researchers in the United States and Spain, A/Prof Hooper aims to characterise a protein known to drive the spread of cancer.

While localised cancer can often be cured, curative treatment is generally not possible for cancer that has spread. The fellowship will allow A/Prof Hooper and his team to continue to find new ways to treat people with cancer, specifically focussing on prostate, colorectal and ovarian.

Being a Mater researcher, collaboration with Mater clinicians has helped progress this important research. A/Prof Hooper said he was excited to marry up the lab expertise with the clinical excellence and strengthen the relationship between bench and bedside.

All heart

Mater researcher Associate Professor Jon Whitehead was named the Heart Foundation Researcher of the Year for his research into ways to control fat cells.

A/Prof Whitehead’s research aims to increase our understanding of how the body produces new fat cells and will potentially lead to the development of a new set of strategies to protect people from the effects of obesity and heart disease.

Recent research has shown that under conditions of positive energy balance—where more energy is absorbed from food than is expended through physical activity—the body may respond by increasing the size of existing fat cells, rather than generating new cells in which to store fat which leads to problems within the fat tissue that can contribute to the development of cardiovascular disease. On the other hand, people who retain the ability to generate new fat cells have smaller and healthier fat cells, and are better protected from some of the harmful effects of obesity.

As part of his project, A/Prof Whitehead will build on previous Heart Foundation-funded findings that have identified a novel biological mechanism that controls the production of fat cells.
Researchers, scientists and students were honoured at the annual Mater Research Awards for Research Excellence.

Dr Sumaira Hasnain, Professor Ian Zimmer, and Professor Timothy Florin were awarded the institute medals while Dr Shelley Wilkinson, Mr Indrajit Das and Ms Jacqueline Jauncey-Cooke received the ‘early career researcher’ and ‘research higher degree student awards’ (respectively) for their contributions to Mater Research. Named after the Sisters of Mercy, the research awards went to:

- Dr Sumaira Hasnain: Sr Regis Mary Dunne Medal for outstanding research contribution
- Professor Ian Zimmer: Sr Madonna Josey Medal for outstanding contribution to the operation of the Institute
- Professor Timothy Florin: Sr Eileen Pollard Medal for incorporating research into clinical care provision
- Dr Shelley Wilkinson: Early Career Researcher Award
- Mr Indrajit Das: Scientific Research - Research Higher Degree Award
- Ms Jacqueline Jauncey-Cooke: Clinical Research – Research Higher Degree Award.
**Financials**

**Mater Research revenue**

<table>
<thead>
<tr>
<th>Source</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grant income</td>
<td>$6,041,893</td>
</tr>
<tr>
<td>Donations and bequests</td>
<td>$4,655,835</td>
</tr>
<tr>
<td>Mater Health Services infrastructure funding</td>
<td>$3,000,000</td>
</tr>
<tr>
<td>Government infrastructure funding</td>
<td>$1,849,002</td>
</tr>
<tr>
<td>Commercial funding</td>
<td>$100,000</td>
</tr>
<tr>
<td>Other income</td>
<td>$2,695,996</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$18,342,726</strong></td>
</tr>
</tbody>
</table>

**Mater Research expenditure**

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research and development expenses</td>
<td>$8,264,456</td>
</tr>
<tr>
<td>Research support expenses</td>
<td>$4,808,781</td>
</tr>
<tr>
<td>Administration expenses</td>
<td>$3,860,301</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$16,933,538</strong></td>
</tr>
</tbody>
</table>
Publication list

2012 was another record year for Mater Research, with 287 publications in national and international literature. More than 40 per cent of these publications were in ERA classification A* or A journals representing the upper echelons of health research journals, showing the international competitiveness of our research. Pleasingly, 60 per cent of these publications were primarily driven at Mater and 40 per cent involved Mater researchers collaborating externally. A significant highlight for the year was being published in Nature Medicine by Jean-Pierre Levesque and Ingrid Winkler’s research groups.


Publication list continued


Izatt MT, Bateman GR, Adam CJA. 2012. Evaluation of the iPhone with an acrylic sleeve versus the Scoliometer for rib hump measurement in scoliosis. Scoliosis 7: 14.


Publication list continued


Publication list continued


Serisier DJ, Bowler SD. 2012. Randomized Controlled Trial of Nebulized Gentamicin in Non-Cystic Fibrosis Bronchiectasis... without Patient Blinding. Am J Respir Crit Care Med 186: 461.


Thallas-Bonke V, Coughlan MT, Tan AL, Harcourt BE, Morgan PE, Davies MJ, Bach LA, Cooper...
Publication list continued


Tong JY. 2012. The potential role of allocation preference, perceived control group inferiority and delay to percutaneous coronary reperfusion on patient, consent provider and recruiting clinician views of a prehospital induced hypothermia trial. Resuscitation 83: e75; author reply e77.


Tong JY. 2012. Controlled trials of transport modality in trauma are feasible. Acad Emerg Med 19: 481; author reply 482.


Tong JY. 2012. The potential role of allocation preference, perceived control group inferiority and delay to percutaneous coronary reperfusion on patient, consent provider and recruiting clinician views of a prehospital induced hypothermia trial. Resuscitation 83: e75; author reply e77.


Tong JY. 2012. Controlled trials of transport modality in trauma are feasible. Acad Emerg Med 19: 481; author reply 482.


Tong JY. 2012. The potential role of allocation preference, perceived control group inferiority and delay to percutaneous coronary reperfusion on patient, consent provider and recruiting clinician views of a prehospital induced hypothermia trial. Resuscitation 83: e75; author reply e77.


have distinct mechanisms of action on bone marrow HSC niches and bone formation. Leukemia 26: 1594-1601.


Thank you

Mater Research would like to thank the following supporters for their generous contributions in 2012. Your support allows us to continue our valuable research and discover more for our community.

The Advertising Works
Ahura Resorts
Estate of Vsevolod Alexandroff
Mr Nicholas & Mrs Alexandra Amarandos
Angelo Andronis
ANZ Banking Group Ltd
Armstrong Family, Jimboomba
Police, Bunnings Browns Plains
& Ulysses
Arrow Energy
ATCO Structures & Logistics Pty Ltd
Australand
Australian Leisure & Hospitality Group
Estate of Stanley Alfred Bain
Mr Adrian Kirwan, Bartholomeusz
Kirwan Real Estate
Bendigo Bank
BHP Billiton
BIG W Inc
Big W
BMD Group
Brisbane Convention & Exhibition Centre
Canturi
Carlton United Brewery
Rennie, Teresa & Christy Casasola
Channel Nine
Mrs Cathryn Chatburn
Child’s Play
Mr & Mrs Brett & Maria Clark
The Coffee Club
Commonwealth Bank Staff Community Fund
Construction Income Protection Qld
Covidien
CPC Constructions
Ms Heather Craig
Cromwell Operations Pty Ltd
Mr Peter De Angelis
Digital Genius
Dry July Foundation
Mr Eddie Duncan
Easternwell
febbox Limited
Dr Peter & Mrs Jeanie Ferguson
Marian & EH Flack Trust
Mr Tony Foster
The Frangipani Foundation
Fun over Fifty
Mr John & Mrs Kay Gallagher
Gambling Community Benefit Fund
Mr Simon George and Sons
Gill Pty Ltd
GOA Billboards
Golden Casket
GPS Old Boys Rugby Union Club
Greek Orthodox Community of St George Brisbane
Andrew Greig & Ingrid Asbury
Estate of Aldwynne JN Griffiths
Estate of Melville S Hampson
IGA
Incolink
International Women’s Day Fun Run/Walk
IPG Print
Ipswich City Council
Ivy Wired Realltime
JCDcaux
Mr Alan Jones AO
Josh Develop
K&V Enterprises
Kellies Antiques
The Knappick Foundation
Fundraising efforts of Mary Lakey & Committee
Estate of Mrs DM Lee
Lexus of Brisbane
Lion Nathan
Mater Prostate Cancer Research & Treatment Project
Liquor Marketing Group
L J Hooker Land Marketing
Mancorp Quality Homes
Fundraising efforts of Mater Mothers’ Hospital Auxiliary
Fundraising efforts of Mater Private Hospital Redland Ladies Auxiliary
Ms Pip McConnel Oats
Mrs Karen McIntyre
Medline Australia
MHS Staff Association
Misa Constructions Pty Ltd
Mr Simon George and Sons
Gill Pty Ltd
K&B Furniture
Mr E & Mrs S Charsley
Ms Vivian Tan
Tomkin Commercial & Industrial Builders
Toowoomba Prostate Cancer Luncheon
Transfab Pty Ltd
Estate of Ronald Leslie Tulk
Turner & Townsend Pty Ltd
VCFs Foundation Qld
Mr Henry & Mrs Mary Wagner
Estate of Neil Wallace
Mr John Wailer
Waterfront Place
Fundraising efforts of Mr Shaune Watts
The T Weston & M Morrison Perpetual Charitable Trust
The White Family
Mr Graeme Wilson
Yu Feng Pty Ltd
Dr Felice & Mrs Margredel Zaccari
Prof Ian & Mrs Louise Zimmer
Zupps

Mater Research would also like to thank all of our donors, lottery supporters and those who have participated in our fundraising events.

Pitcher Partners Accountants
Plantation Homes
Preston James Fund
Queensland Hotel Association
Queensland Marine Centre
Queensland Mining Industry
Health & Safety Conference
Racecourse Road Turns Pink
Realestate.com.au
John T Reid Charitable Trusts
JL Richards & Sons Pty Ltd
Robert Clark Creative
Ronald McDonald House Charities
Russell’s Solicitors
Estate of Ena Amy Ryan
Sealy of Australia
Mr Tim Sharp
The Sheehan-Birrell Foundation
John & Robynne Siemon & Mrs JR Siemon
Sgma Company Ltd
Simon Family
Six String Design
1300SmilesDentists - Dr Daryl & Lisa Holmes
Smiling for Smiddy
Estate of Robert Southwell
Springfield Land Corporation
Estate of Stephan Starepravo
Mr Alan & Mrs Sandra Stephens
Stockland
Summit Fleet Leasing & Management
Suncorp
Sunverybank Community Sports Club
Suzuki Queensland
Synthes Asia-Pacific
Telstra Foundation
Ms Vivian Tan
Tomkin Commercial & Industrial Builders
Toowoomba Prostate Cancer Luncheon
Transfab Pty Ltd
Estate of Ronald Leslie Tulk
Turner & Townsend Pty Ltd
VCFs Foundation Qld
Mr Henry & Mrs Mary Wagner
Estate of Neil Wallace
Mr John Wailer
Waterfront Place
Fundraising efforts of Mr Shaune Watts
The T Weston & M Morrison Perpetual Charitable Trust
The White Family
Mr Graeme Wilson
Yu Feng Pty Ltd
Dr Felice & Mrs Margredel Zaccari
Prof Ian & Mrs Louise Zimmer
Zupps

Mater Research would also like to thank all of our donors, lottery supporters and those who have participated in our fundraising events.

Lions share

This year Lions Australia donated a generous $100 000 to purchase specialised research equipment that will assist prostate cancer research at Mater Research. This generous donation helped make a significant difference to the lives of thousands of men and their families who will one day benefit from this research. Thank you Lions Australia.
### Mater Research patents

<table>
<thead>
<tr>
<th>Mater Research number</th>
<th>Title</th>
<th>Application number</th>
<th>Priority date</th>
<th>Country</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMRI-15</td>
<td>A method of Immunomodulation</td>
<td>PCT/AU2003/001038</td>
<td>15-Aug-02</td>
<td>Australia, Canada, Europe, United States, New Zealand</td>
<td>Granted Application, Application, Application, Granted</td>
</tr>
<tr>
<td>MMRI-32</td>
<td>Treatment &amp; prophylaxis</td>
<td>PCT/AU2008/001652</td>
<td>10-Dec-07</td>
<td>Australia, United States</td>
<td>Application</td>
</tr>
<tr>
<td>MMRI-41</td>
<td>Improved treatment &amp; prophylaxis</td>
<td>PCT/AU2008/001810</td>
<td>10-Dec-07</td>
<td>Australia, Europe, United States, Canada</td>
<td>Application, Application, Application, Application</td>
</tr>
</tbody>
</table>

### Mater Research Board

Mater Research would like to thank our committed board and committee members for their hard work throughout 2012.
- Prof Ian Zimmer (Chair)
- Dr Carrie Hillyard (Deputy Chair)
- Jim Walker AM
- Dr John O'Donnell
- Prof Geoff Kiel
- Sr Deirdre Gardiner RSM (Resigned December 2012)
- Prof Brandon Wainwright
- Prof David McIntyre
- Stephen Denaro (Company Secretary)
Mater Research

Head office (South Brisbane)
Level 3 Aubigny Place
Raymond Terrace
South Brisbane, Qld, 4101

Telephone +61 7 3163 2555

research.mater.org.au
www.facebook.com/materqld