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In order to find solutions to health issues medical researchers delve into the deepest areas of the body in search of new answers. Through this exploration, researchers become specialised in particular areas of discovery and development and begin the journey of preventing and improving health options for those in need.

Mater Medical Research Institute (MMRI) has four distinct medical research programs called the:

- Dendritic Cell Program
- Mucosal Diseases Program
- Biotherapy Program
- Clinical Trials Centre

Through these programs MMRI researchers are able to explore health issues commonly referred to as:

- Cancer of the prostate, lung, ovaries, breast and colorectal system
- Adult and childhood leukaemia
- Adult and childhood diabetes
- Multiple myeloma
- Bowel diseases including: ulcerative colitis and Crohn’s disease
- Psoriasis
- Stroke and heart attack
- Palliative care
- Tissue repair of multiple degenerative diseases
- Organ transplant disorders such as bone marrow transplantation - graft vs. host disease (GVHD) and much more.
Celebrating 10 years of Discovery

MMRI’s commitment to health and medical research remains as strong today as in 1998, with the institute’s pledge to discover and develop improved health care options at the centre of their ethos.

Having been a member of the MMRI Board for three years and Chairman for the duration of this time, I have had the opportunity to be a part of the organisation’s milestones and developments.

As an academic researcher myself, I have a great understanding and appreciation of the nature and delicacy of the work being undertaken by researchers at MMRI and I have great pride in their individual and organisational achievements.

Medical research is a long term investment but inevitably an investment for the future, and an investment that I, and members of the MMRI Board, view as paramount in re-shaping health care options both today and in the future.

On behalf of the MMRI Board of Directors, I would like to congratulate the staff, collaborators and partners of the MMRI for their continued service to medical research.

Thank you
Professor Ian Zimmer

Our strength is in our future

2008 marked the MMRI’s 10th Anniversary and has been cemented as the year of celebration for our future objectives to both the health community and medical research.

As we move towards our next milestone as part of the Smart State Knowledge Corridor and Translational Research Institute (TRI), I am proud to report that the MMRI brings an exceptional research team to the join the other partners of the TRI facility.

Our future also include the opportunity to be part of the new Children’s Research Institute at the Mater Campus and the Commonwealth Government $7.5 million Prostate Cancer Research Centre to be based at the new TRI facility.

We will also maintain our position and involvement with the Cooperative Research Centre for Biomarker Translation (CRC-BT) and the State Government’s Health and Medical Research and Development Strategy.

I would like to take this opportunity to thank our supporters at the Mater Hospital and Mater Foundation, our commercialisation partner Uniquest, CRC-BT and TRI partners, and our service providers for their ongoing support.

And lastly, I wish to thank the dedicated staff who continue to work tirelessly for the betterment of our community. It is a privilege work with you.

Thank you
Professor Derek Hart
Sister Sandra Lupi  
Sisters of Mercy Congregation Leader

The Sisters of Mercy have always regarded research as a vital component of compassionate and high quality patient care. We have a long-standing commitment to research as an integral part of our health care services. The Mater Medical Research Institute provides the link with our tradition of providing excellence in health care and scientific inquiry within the history, mission and values of the Sisters of Mercy and Mater Health Services Ltd. As MMRI moves into its second decade, it has succeeded in becoming a world-class facility, conducting internationally recognised research aimed at improving health care.

The Sisters of Mercy’s objective in establishing the Mater Medical Research Institute was to foster an environment of academic medicine on the Mater campus whereby scientists can work alongside clinicians to ensure discoveries are translated into clinical practice. The Mater Medical Research Institute has made significant progress in achieving this goal as well as achieving scientific discoveries which hold great hope for improving health care and the quality of life of patients everywhere.

The Sisters of Mercy congratulate and thank Professor Ian Zimmer (Board Chair); Board Directors; and the Senior Executive Team of the Institute - Professor Derek Hart (Director), Associate Professor Mark Bowles (Deputy Director - Operations) and Ms Topaz Conway (Deputy Director - Development). We also thank and pay tribute to the scientists and their teams who make possible the scientific discoveries and innovative health care outcomes through their exemplary work and continued commitment to our mission.

Thank You
Sr Lupi

John McAuliffe  
Mater Health Services Board Chairman

My role as Board Chair for Mater Health Services is a role I take seriously. The function of my position is to support people at all levels, from the discovery and development of new treatments to the care and compassion for persons in need.

MMRI is a key player in this very real world of health care prevention and has proved, over the past ten years, that their work is fundamental in treating and caring for persons with cancer, leukaemia, psoriasis, inflammatory bowel disease, anaemia and much more.

I have great faith in the work of the MMRI and their collaborators and I thank them for their past discoveries and their continued commitment toward the advancement of new preventative and therapeutic health options.

Thank You
John McAuliffe

Hon. Peter Beattie  
MMRI Patron

Professor Peter Doherty  
MMRI Scientific Patron
Board of Directors

Professor Ian Zimmer (Chair)

Dr Carrie Hillyard (Vice Chair)

Professor Geoff Kiel

Professor Peter Brooks

Sister Deirdre Gardner

Dr John O’Donnell

Mr Jim Walker AM
2008 has been a year in which we’ve seen significant steps in the development of MMRI in research, corporate and infrastructure areas.

As well, as our tenth year of operation, it has been a year of reflection, celebration and planning.

MMRI is committed to providing its researchers with access to high quality staff, and a range of cutting edge scientific procedures and state-of-the art technologies as part of its strategy to fulfilling its mission. These services are delivered through our hard working Scientific Support Team.

To support our research, we have established a well-credentialed Scientific Advisory Committee to provide high level advice. To enhance our corporate governance, we have added Board sub-committees to deal with remuneration and audit and risk management.

The addition an in-house Human Resource capability has proven an immense asset to all staff. As a liaison with the services provided by MHS, our HR staff have proven invaluable.

Our other administrative areas, the Finance, Research Management, Information Technology and Executive Support teams have continued to provide an exceptional level of support.

MMRI values the ongoing support it receives from the Queensland State Government, through the Department of Tourism, Regional Development and Industry and Queensland Health and Commonwealth Government Support through the Department of Health and Ageing.

MMRI strongly supports and is actively engaged in the development of the Translational Research Institute with sites at Princess Alexandra Hospital and the Mater Campus with its partners, the University of Queensland, Queensland University of Technology and Queensland Health.

Thank you to all our staff. It has been a wonderful year and a watershed to the future.

Thank you

A/Prof. Mark Bowles
Development Report  
Ms. Topaz Conway

The MMRI had lots to celebrate in 2008, marking 10 years since our inception on the Mater campus. We grew from a small team of 10, to 100 staff and students, and an institute budget of $1M to $9M this year.

2008 marked the beginning of the global economic crisis, and brought with it a level of uncertainty. And while all of us are tightening our belts, the MMRI has continued to grow from strength to strength. This is testament to the quality of the research being generated by our scientists and our achievements. Many of our publications have attracted international scientific and commercial interest, reinforcing MMRI’s foothold on the world class scientific playing field. We successfully completed our first phase 1 prostate cancer vaccine clinical trial and are about to open the next one, utilising our proprietary CMRF-56 antibody, which we believe is an even more efficient way to deliver this therapy. All extraordinary achievements for the MMRI.

So while most industries have started down-sizing, MMRI has expanded, successfully attracting world class scientists and clinical researchers from around Australia. Our commercialisation partnership with Uniquest continues to grow and produce preliminary results.

MMRI’s partnership with 7 leading national and international research, health and biotechnology bodies through the Cooperative Research Centre for Biomarker Translation (CRC-BT) has allowed MMRI to pursue key scientific projects that have good potential application to patients, and therefore potential commercial value.

Maurer depends on support from multiple areas, and in this tough economic time, I would like to thank the Mater Foundation, Mater Health Services, grant and philanthropic partners, and each and every individual or corporate donor and volunteer for finding it in their hearts to continue supporting the Institute.

And lastly, none of this would be possible without the commitment and dedication of the extraordinary team of people at the MMRI.

Thank you

Topaz Conway
In 2008, the MMRI appointed a Scientific Advisory Committee chaired by Professor Tony Basten. The Committee is responsible for examining the Institute’s research programs and performance and providing expert advice on the quality of science undertaken in the MMRI.

Chair: Professor Tony Basten, OA, FAA, FTSE
Professor Basten is one of Australia’s leading medical researchers and clinical immunologists. Throughout his distinguished career he has been a leader in his field. He is known amongst his peers as one of the rare breed of immunologists who has successfully balanced the demands of clinical medicine whilst leading an internationally competitive research team. As a physician, Professor Basten is a Fellow of the British Royal College of Physicians (London), the Royal Australian College of Physicians and the Royal College of Pathologists of Australia. As a scientist he has the distinction of being elected as a Fellow both of the Australian Academy of Science and the Australian Academy of Technological Sciences and Engineering.

He is currently Senior Principal Research Fellow; Acting Director, Immunology Program, Garvan Institute of Medical Research; Emeritus Professor, University of Sydney; Professor (Adjunct), Faculty of Medicine, The University of New South Wales

J.J. (Kim) Wright, PhD

Dr. Wright holds a Ph.D. in Organic Chemistry from the University of Manchester, U.K. and Australian National University, Canberra and spent two post-doctoral years with Professor Derek Barton at Imperial College, London. Until recently, Dr Wright was Senior Vice President, Medicinal Chemistry and Preclinical Development at ChemoCentryx after 17 years with Bristol-Myers Squibb Company, where he was a Vice President of Medicinal Chemistry and responsible for managing approximately 150 chemists.

Professor Joseph Trapani, PhD, FRACP

Professor Trapani is Deputy Director, Research at the Peter MacCallum Cancer Centre, Melbourne, where he also heads the Cancer Immunology Program. His research interests include the immunopathology of viral diseases, apoptosis induction by cytotoxic lymphocytes and cancer immunotherapy. Joe is a Senior Principal Research Fellow of the NHMRC and the author of 160 primary research papers, reviews and book chapters on histocompatibility, apoptosis and cancer immunotherapy.

Professor John Prins, MBBS, PhD, FRACP

Professor Prins is Program Head of Metabolic Medicine at Diamantina Institute for Cancer, Immunology and Metabolic Medicine and Chair of the Centres of Health Research on the Princess Alexandra Hospital Campus. In this role, he is responsible for co-ordinating the campus-wide research strategy, fostering research, facilitating the recruitment of researchers to the campus and integration of research and clinical activities wherever possible. He is Founder/Director of the University of Queensland Centre for Diabetes and Endocrine Research, one of the most prominent and successful groups on the
hospital campus. The Centre has 5 research groups and ~45 scientists working in the fields of obesity, Type 2 Diabetes, liver disease and osteoporosis.

Professor Leonard Kritharides, PhD, FRACP, FCSANZ, FAHA

Professor Kritharides is Head of Department and Director of Cardiology at Concord Repatriation General Hospital (CRGH) Sydney, University of Sydney, and co-leader of the Macrophage Biology Group at the Centre for Vascular Research, University of New South Wales. He has clinical and basic research interests, and holds conjoint appointments as Associate Professor at the University of Sydney and the University of New South Wales. His current active research interests include macrophage cholesterol and protein biology, reversible myocardial dysfunction, and the evaluation of native and bypass graft disease using computed tomography (CT angiography).

Associate Professor Sarah Robertson, PhD

Dr Robertson’s work focuses on early pregnancy, particularly the prevention of miscarriage and improved IVF technologies. A NHMRC Senior Research Fellow, Dr Robertson has been awarded three young investigator awards and was recognised as a Tall Poppy of South Australian Science in 2000. She is a member of the governing council and research committee of the NHMRC and an elected council member of the International Society for the Immunology of Reproduction.
MMRI is a partner in the Queensland Smart Cities Strategy, Knowledge Corridor.

This Corridor is a geographical curve around the Brisbane River linking distinct health research, medical, education, biomedical and urban lifestyle precincts.

Stretching from the University of Queensland, St.Lucia and across the river to Stones Corner, the Corridor extends up to Mater Hill, the Princess Alexandra Hospital and all the way through to Herston’s Royal Brisbane Hospital, and Queensland University of Technology’s Kelvin Grove campus.

As a central component of the corridor, MMRI and partners will expand into the Translational Research Institute (TRI) scheduled to be built by 2012 on the grounds of the Princess Alexandra Hospital.

The TRI, brainchild of MMRI Director Professor Derek Hart and Professor Ian Frazer, will be the benchmark of medical and biotechnology research in the southern hemisphere, and home to world class discovery, development, production, clinical testing and commercialisation.

In addition, MMRI will have the opportunity to expand its laboratory size, with provisions made to facilitate 175 research staff.

MMRI will continue to play a key role at South Brisbane’s Mater Hill campus through its continuing close partnership with Mater Health Services.
Cooperative Research Centre for Biomarker Translation (CRC-BT)

The Cooperative Research Centre for Biomarker Translation (CRC-BT) is a world leading collaboration of seven national and international medical research, health and pharmaceutical bodies.

The Cooperative Research Centres (CRC) Program (linked to www.crc.gov.au) is an Australian Government funded initiative which aims to boost world-class research and turn Australia’s scientific innovations into successful new products, services and technologies, making our industries more efficient, productive and competitive.

The goal of CRC-BT (trading as TransBio Ltd) is to develop antibodies against therapeutic and diagnostic targets (biomarkers) that are present on cells that play a key role in major diseases, including autoimmune disease (especially rheumatoid arthritis) and cancers (haematological, colorectal, breast and prostate).

Outputs from the CRC-BT will transform the management of these diseases through the development of specific and sensitive diagnostic tests and new therapeutics associated with novel cell surface molecules, which we refer to as “Membrane Biomarkers”, identified on cancer cells and human leucocytes.

Successful projects of the CRC-BT could have the potential to reduce the overall cost of the treatment and management of diseases such as autoimmune, cancer and transplantation by $50 million/year.

By 2018, through the clinical use of the therapeutic agents and diagnostic tests that are developed, the CRC-BT will provide a training platform to medical staff who use these new therapies and tests.

Research programs with the CRC - BT:

- Membrane Protein Biomarker Discovery
- Binding Re-agent Generation
- Pre-clinical evaluation; correlation of biomarker with disease
- Diagnostic evaluation
- Therapeutic evaluation

CRC - BT Student Scholarship recipient: Mr Neil Doyle
Program Head: Professor Derek Hart

Dendritic Cells (DC) are a type of white blood cell involved in preventing autoimmunity and in triggering immune responses against infections and cancer. MMRI researchers are world leaders in the area of DC research, and are currently exploring these cells to provide improved treatment options for patients with cancer or abnormal immune responses.

Within the DC Program, the research is carried out by the DC Immunoregulation, DC Cancer, DC Antigens and DC Growth and Differentiation Teams

DC Immunoregulation Team
Team Leader: Dr Georgina Clark
Team Members:
Dr Xinsheng Ju, Senior Research Officer
Ms Yitian Ding, Research Officer
Dr Courtney Tate, MBBS/PhD Student
Ms Maryam Azlan, PhD Student

The Immunoregulation Team studies proteins, on the surface of the white cells, which have the ability to regulate a white blood cell response and amplify or diminish an immune response. One group of these are the human CD300 molecules, CD300a, CD300b, CD300c, CD300d, CD300e and CD300f, found on the surface of white blood cells.

By studying the biology of the CD300 molecules, we will determine what role CD300 molecules play in the common chronic inflammatory skin disease, psoriasis, and how they may be used for targeting treatments of Acute Myeloid Leukaemia (AML).

A second focus of this team is to study the role of two proteins called CD302 and AHCYL1. These proteins are important in the ability of white blood cells to sense invasion of a foreign pathogen. The team has developed experimental models where these molecules are no longer found.

Projects
- CD300 molecules as regulators of DC function
- CD300f modulates human monocyte inflammatory responses
- Technologies to study human CD300 molecules
- CD300 molecules in psoriasis
- Two new experimental models involving CD302 and AHCYL1 knockout (gene deleted) mice.

2008 Highlights
- Demonstrated that signals through CD300a/c molecules during cell activation results in an increase in the production of Type I IFN and a decrease in the production of TNF
- Invited to attend and present at the European Macrophage and Dendritic Cell Society (EMDS) after publishing of paper in Blood.
- Understood the significant differences in the level of expression of CD300a/c molecules on the surface of some leucocytes, showing that ratio of CD300a and CD3001 levels differ between psoriasis and normal donors in some white blood cells
- Found preliminary data that showed signals, through CD300a/c molecules, are different in patients with autoimmune disease.

Goals for 2009
- Publish research results regarding the mechanism by which CD300a/c molecules contribute to the inflammatory response found in psoriasis.
- Publish results from CD300f module human monocyte inflammatory responses research, demonstrating an understanding of how CD300f regulates inflammatory DC responses.
DC Cancer Team

Team Leader: Dr Kristen Radford

Team Members:
- Dr Sarah Jongbloed, Research Officer
- Ms Kylie McDonald, Research Assistant
- Mr Andrew Kassianos, PhD Student
- Ms Melinda Hardy, PhD Student
- Dr Annelie Vulink, PhD Student

The DC Cancer Team aims to understand fundamental human DC biology that is essential for the development of new vaccines. Immunotherapy, using the patient’s own dendritic cells instructed ex vivo to initiate and direct anti-cancer immune responses, is a new non-toxic strategy with the potential to treat a variety of malignancies and infectious diseases. The complexity of mouse DC subsets and their specialised functions is only just beginning to be revealed. The clinical translation of this data is limited by the lack of knowledge about human DC subsets. Our goal is to identify the human DC subset(s) responsible for inducing anti-cancer immune and anti-viral immune responses. This will allow us to develop more potent and specific vaccines by developing technologies to target the most appropriate DC subsets directly in vivo.

Projects
- Function of human blood DC subsets
- Discovery of new TAA using a novel E.coli-based screening strategy
- Selection of prostate-antigens for DC immunotherapy

2008 highlights
- Studied the function of rare blood DC subsets by examining their capacity to induce immune responses
- Submitted a patent for developing our novel prostate cancer TAA, for inclusion in clinical trials.

Goals for 2009
- Continue to study the function of rare blood DC subsets by examining their capacity to induce immune responses.
- Publish novel TAA screening strategy to Acute Lymphoblastic Leukaemia (ALL)

DC Antigens Team

Team Leader: Dr David Munster

Team Members:
- Dr Yonghua Sheng, Senior Research Officer
- Ms Anna Palkova, Research Assistant
- Ms Therese Seldon, PhD Student
- Mr John Wilson, PhD Student

MMRI’s DC Antigens Team is discovering, characterising and developing applications for new molecules associated with DC. As DC are involved in many aspects of immune function, the team’s work potentially impacts on numerous diseases and conditions. Current work is directed toward a serious complication of bone marrow transplantation called Graft versus Host Disease (GVHD).

Projects
- Therapeutic anti-DC antibody development – CD83 and CMRF-44
- Human mouse models of GVHD and leukaemia.

2008 Highlights
- Obtained key in vivo evidence that, unlike current immunosuppressants, anti-DC therapy does not impair protective and therapeutic immunity in bone marrow transplantation
- Publication of research paper, entitled Antibody to the DC surface activation antigen CD83 prevents acute GVHD in The Journal of Experimental Medicine.
- Successful adoption of phage display technology for engineering anti-DC therapeutic antibodies
- Developed antibody clones specific for the DC activation marker CD83 and high affinity CMRF-44 antibody clones, ready for humanisation.

Goals for 2009
- Develop humanised antibodies that target activated DC, ready for testing for therapeutic potential to prevent GVHD
- Demonstrate that our proposed new GVHD therapy does not compromise immunity to infection or the desired graft vs leukaemia effect in bone marrow transplantation.
**DC Growth and Differentiation Team**

**Team leader:** Dr Slavica Vuckovic  
**Team member:**  
Dr Lisa Freeman, Post Doctoral Research Officer  
Dr Pooi-Fong Wong, visiting Post Doctoral Research Fellow  
Mrs Dalia Khalil, Research Assistant  
Ms Melinda Dean, PhD Student  
Mr Adam McKinlay, PhD Student  
Mr Shusei Fukuyama, Hon. Student

The DC Growth and Differentiation Team is focused on applying cutting edge research on human DC to modulate immune response in allogeneic transplantation, multiple myeloma (MM) and juvenile type 1 diabetes mellitus (T1DM).

**Projects**
- Characterisation of human DC capable of inducing a T-cell responses within the bone marrow of humanised mice
- Development of human CD56+ MM in CD122+ cell-depleted mice
- Characterisation of abnormalities in blood DC population in T1DM infants and children and their unaffected siblings
- Characterisation of blood myeloid DC in mannose binding lectin-sufficient and mannose binding lectin-deficient individuals.

**2008 highlights**
- Understanding human myeloid DC in the bone marrow environment following stimulation with blood-borne pathogens which have the ability to acquire and mount a T-cell immune response and contribute to bone immunity
- Sensitive monitoring of the bioluminescent myeloma cells which provide the opportunity to evaluate the steps in MM progression and predict the efficiency of MM therapy. MMRI’s New animal model of human MM allows reliable and rapid CD56+ myeloma cell growth. Blood DC in mannose binding lectin-deficient individuals instructed for elevated inflammatory cytokine production

**Goals for 2009**
- Uncover the interaction between human DC and MM within the bone marrow environment using humanised mouse models.
- Characterise the abnormalities in blood DC population in T1DM infants and children and their unaffected siblings.
MMRI’s Biotherapy Program is investigating how the body’s innate repair mechanism acts in healing tissue after disease or injury, and how blood and immune cells are formed in the bone marrow. MMRI hopes to improve treatments for patients in need of a bone marrow transplant and those suffering from a heart attack. Scientists are also exploring ways for adult stem cells to be used to repair damage from stroke, brain injury, anaemia, leukaemia and other immune-related diseases.

The Biotherapy Program consists of the Adult Stem Cell Laboratory (Professor K Atkinson), the Haematopoiesis Laboratory (A/Professor JP Levesque) and the Solid Organ Transplant Laboratory (Dr S McTaggart).

Adult Stem Cell Team

Team Leader: Professor Kerry Atkinson

Team Members:
Dr Gary Brooke, Senior Research Officer
Dr Rebecca Pelekanos, Research Officer
Mr Tony Rossetti, Senior Research Assistant
Dr Zareen Yameen, Research Assistant
Ms K Kollar, PhD Student
Mr M Cook, PhD Student
Ms C Heazlewood, PhD Student

Projects
The Adult Stem Cell Laboratory is focused on the way stem cells behave with the goal of using these stem cells to repair damaged organs such as the heart after a heart attack. Human stem cells are grown from normal term placenta after delivery of the baby and there is no need for tissue-matching between the stem cell donor and the stem cell recipient.

2008 Highlights

- Molecular trafficking mechanisms of multipotent mesenchymal stem cells (MSC) derived from human bone marrow and placenta

Stem Cells and Development
- Compared human placenta-and bone marrow-derived multipotent mesenchymal stem cells and Development
- Manufactured human placenta-derived mesenchymal stem cells for clinical trials

- Ongoing successful scientific collaborations with Professor R Harvey (VCCRI, UNSW) and Professor M Little (IMB, UQ) comparing bone/bone marrow-derived murine MSC with endogenous murine cardiac stem cells and endogenous murine renal stem cells
- Five additional collaborations with AIBN UQ.

Goals for 2009

- Successfully compete peer-reviewed grant proposal submitted to NHMRC, NHFA and the Australian Stem Cell Centre
- Continuation and acceleration of our current publication momentum in the scientific and medical peer-reviewed journals targeting journals with impact factors greater than 5
- Submit a new NHMRC project proposing, in collaboration with Professor Justin Cooper-White, Professor Lars Nielsen and Dr Michael Doran (AIBN, UQ), our \textit{ex vivo} haematopoietic expansion work using a monolayer of MSC or their osteoblast derivatives.
The Solid Organ Transplant Team is investigating important pathways involved in the immune response following transplantation with a view to developing novel therapies for use in clinical solid organ transplantation. The Team’s aim is to discover ways to manipulate the immune system during the early stages of a transplant so that an individual becomes ‘tolerant’ to the transplant organ, without the need for ongoing drug therapy.

Projects
- The use of mesenchymal stem cells (MSC) as cellular immunosuppressive therapy in solid organ transplantation.
- Identification of mechanisms by which MSC ameliorate kidney ischaemia reperfusion injury.

2008 Highlights
- We have extensively characterised and optimised the growth of rat, murine and human MSC and determined the maximally tolerated dose that can be administered intravenously in rats. In an animal model, we have shown that injected MSC travel to a transplanted kidney but do not seem to have an effect on transplant rejection. Further studies in this model and in an animal model of ischaemia-reperfusion injury are currently underway, to better understand the mechanisms of MSC homing and immune modulation.
- In separate in vitro studies, we have shown for the first time that MSC treatment of rat renal tubular epithelium exposed to hydrogen peroxide (to simulate IRI) demonstrated significant improvements in markers of tubular injury.

Goals for 2009
- We will continue our studies into the management of acute kidney injury. To date, no specific therapies have been shown to be beneficial in human clinical trials and treatment is largely supportive. We aim to determine the effect of MSCs on the maturation and differentiation of dendritic cells in renal ischaemia reperfusion injury (IRI) and whether MSC treatment results in skewing of the immune response which is protective against renal IRI.
Haematopoietic Stem Cell (HSC) Team

**Team Leader:**
A/Professor Jean-Pierre Levesque

**Team Members:**
Dr Ingrid Winkler, NHMRC Research Fellow
Dr Falak Helwani, NHMRC Research fellow
Ms Valerie Barbier, Senior Research Assistant
Ms Bianca Nowlan, Research Assistant
Ms Yi Shen, PhD student
Ms Maria-Anna D’Souza, MPhil Student

Haematopoietic stem cells (HSC) are responsible for making all blood and immune cells. These extremely rare cells reside in the bone marrow and the development, migration and growth are very tightly regulated to keep the number of adequate red and white cells in the blood in a very narrow range. This is necessary to prevent leukaemia, anaemia, and immune and bone disorders and is made possible by very specialised microdomains of the bone marrow called “niches” (kennel in French), which fine tune all aspects of HSC behaviour.

The HSC Team is studying these niches at the molecular level in order to understand how HSC are regulated at the molecular level and identify new therapeutic targets to treat blood, bone and immune diseases.

**Projects**
- Regulation of haematopoietic stem cell niches
- Mechanisms of haematopoietic stem mobilisation
- New therapies to increase haematopoietic stem cell mobilisation and resistance to chemotherapies and radiation
- Mesenchymal stem cells

**2008 Highlights**
- Discovery that bone marrow myeloid cells are necessary to maintain bone formation and HSC within the bone marrow. These results were selected for oral presentation at the annual conference of the American Society of Haematology in San Francisco in December 2008.
Bone Marrow Transplant Team

Team Leader: A/Professor Alison Rice

Team Members
Dr Hannah Cullup, Research Fellow
Ms Melinda Kambouris, PhD student
Ms Laura Sinfield, Honours Student

Not all patients with leukaemia will be cured by chemotherapy. Blood stem cell transplantation improves their chances of survival. Stem cell transplantation requires intensive chemotherapy and radiotherapy to reduce the underlying leukaemia followed by infusion of healthy stem cells to provide an anti-leukaemic effect and normal blood cells.

Recovery from transplantation is not straightforward as recovery can be hampered by GVHD, despite immunosuppression.

GVHD causes serious damage to the internal organs and lining of the mouth and gut and is associated with an increased risk of death after transplantation. Recovery can also be circumvented by euakaemic relapse.

Project
• Investigating therapeutic cell based strategies designed to prevent GVHD and leukaemia relapse and to allow engraftment of a healthy donor blood system. Together, these studies will improve the therapeutic options and long-term survival of patients receiving stem cell transplantation as treatment for leukaemia.

2008 Highlights
• Development of reduced intensity conditioning that resulted in delayed onset of GVHD in two transplant models, with identification of possible mechanism
• Attenuation of GVHD in full tissue mismatched transplant recipients by pre-treatment with CD83 antibody which targets activated dendritic cells
• Reduced leukaemia growth after treatment with anti-leukaemic T lymphocytes
• Attenuation of GVHD using mesenchymal stem cells.

Goals for 2009
• Prevention of GVHD and preservation of anti-leukaemic effect after treatment with anti-CD83 antibody
• Determination of the mechanism of action of CD83 depletion
**Mucosal Diseases Program**

**Program Head:** A/Professor Mike McGuckin

Mucosal diseases arise in the epithelial tissues that separate our bodies from the often hostile external environment. These tissues are common sites of infection (influenza, the common cold), and often debilitating inflammation (inflammatory bowel diseases, bronchitis). After a long period of these insults, cancers may develop in these tissues.

The aim of the Mucosal Diseases Program is to study these diseases with a view to preventing them and improving current treatments. The Mucin and Inflammatory Bowel Disease teams work closely together on basic science and translational research projects with a particular emphasis on gastrointestinal infection, inflammation and cancer.

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**Inflammatory Bowel Diseases (IBD) Team**

**Team Leader:** Professor Tim Florin  
**Team Members:**  
Dr John Duley, Senior Lecturer UQ Pharmacy  
Dr Raj Eri, Research Officer  
A/Prof Mike McGuckin, Mucosal Diseases Program Head  
Ms Rachel Adams: Research Assistant  
Dr Iulia Oancea: PhD Student  
Mr Chin Wen Png: Phd Student  
Mr Indrajit Das: Hon.Student  
Mr Chad Heazlewood: PhD Student  
Ms Sharyn Tauro: PhD Student

IBD are chronic inflammatory diseases of the intestine. There are two main types: ulcerative colitis and Crohn’s disease. The diseases can be devastating often affecting young patients and they cause a large burden on the Australian economy.

**Projects**  
* The IBD team is conducting research into the underlying causes of ulcerative colitis and Crohn’s disease and translating our findings into improved treatment and management of the diseases.

**2008 Highlights**  
* Our group has led the way in understanding the cause of ulcerative colitis by showing that it is due to a problem in complex protein assembly by the cells making the mucus which is the main defence barrier against bacteria  
* Demonstrated that bacteria which can breakdown the mucus barrier, are increased in IBD.  
* Developed, for the first time, a model of 6-thioguanine veno-occlusive liver disease (6TG-VOD). This research endeavours to understand 6TG-VOD and potentially lead to safer and more effective treatments at a reasonable cost to the health budget.

**Goals for 2009**  
* Show that misassembly of MUC2 protein is an early event in the pathogenesis of ulcerative colitis  
* Discover genes that may predispose to the misfolding of MUC2  
* Publish our work on mucolytic bacteria  
* Develop a formulation of 6TG which does not cause VOD.
Mucin Team

Team Leader: A/Professor Mike McGuckin
Team Members:
Dr Sara Linden, Research Fellow
Dr Penny Jeffery, Research Officer
Dr Rajaraman Eri, Research Officer
Ms Debbie Roche, Research Assistant
Ms Kim Miles, Research Assistant
Ms Thu Tran, Research Assistant
Ms Patricia Lusby, Research Assistant
Mr Chad Heazlewood, PhD Student
Ms Sharyn Tauro, PhD Student
Mr Ryan Parlett, PhD Student
Ms Samia Taufiq, MPhil Student

The Mucin Research Team is investigating the biology and clinical applications of a family of genes/proteins known as mucins. We have shown that mucins are a critical component of the barrier to bacterial and viral infection and that mutations in mucin genes can lead to IBD.

Our major current goal is to increase our understanding of the mucosal barrier that separates the body from the outside world. Specifically: how it keeps bacteria from infecting the body, how inappropriate inflammation is initiated causing chronic disease, and how this chronic inflammation leads to cancer.

Projects

- Characterisation of the role of cell surface and secreted mucins as a fundamental component of the mucosal barrier to infection
- MUC2 misfolding, endoplasmic reticulum stress in goblet cells and inflammatory bowel disease
- Examination of the role of cell surface mucins in regulating growth and metastasis in adenocarcinomas
- New therapeutics for IBD
- New diagnostic tests for ovarian cancer
- Characterising mucins and inflammation in chronic respiratory disease.

2008 highlights

- Showed, for the first time, that endoplasmic reticulum stress in secretory cells of the intestine leads to intestinal inflammation. This work could explain why IBD arises. This followed by publication of the in the major international journal *PLoS Medicine*.

Goals for 2009

- Completing our genetic studies of MUC2 in IBD patients; showing how ER stress leads to intestinal inflammation; showing how the hormone ghrelin dampens intestinal inflammation; demonstrating the mechanisms by which cell surface mucins block bacterial infection
- Complete evaluation of our ovarian cancer diagnostic test.
Clinical Trials Centre
Program Head: Professor Derek Hart
Program Outline
MMRI is linking medical research with real-life health care needs through biopharmaceutical development, such as MMRI’s world first CMRF56 prostate cancer vaccine phase 1 clinical trial.

Prostate Cancer Project Team

Principal Investigator:
Professor Derek Hart

Clinical Investigator:
Dr Peter Swindle MBBS MS FRACS, Urologist

Team Leader
Dr Rebecca Prue PhD, Prostate Cancer Project

Team Members
Dr Frank Vari PhD, Senior Research Officer
Dr Vinay Goundar MBBS, Clinical Research Fellow
Dr. Robert Coleman MBBS, Clinical Research Fellow
Mr Tony Rossetti BSc (Hons), Research Assistant
Ms Hui Tong MSc, Research Assistant
Ms Melinda Hardy PhD, Research Assistant
Ms Rachael D’Rozario BSc (Hons), Research Assistant
Ms Sonia Hancock BN RN, Clinical Research Administrator
Ms Georgina Crosbie RN, Clinical Trials Nurse
Ms Stephanie Diaz-Guilas RN, Clinical Trials Nurse
Ms Topaz Conway, Deputy Director (Development)
Ms Diana Gibson RN MSc, Clinical Trials Projects Manager

Prostate Cancer Project

Project
• MMRI has developed a novel platform for the isolation of a patient’s own blood DC (BDC). In the laboratory we provide the BDC with the information they need to help the patients immune system to recognise and destroy the patients tumour. The patients ‘educated’ BDC are then administrated back to the patient. By modulating the patient’s own immune system using our novel BDC based therapies, there is real potential to overcome the patient’s failed immune surveillance and allow the patient’s immune system to attack Prostate Cancer cells.

2008 Highlights
• Closure of the first MMRI led investigator-sponsored clinical trial of a BDC immunotherapy for PC, with 12 participants successfully registered. This trial, which commenced in 2005, was an Phase 1 clinical trial using a BDCA-1 selected blood DC preparation. The clinical outcomes and laboratory outcomes from the trial are currently being collated and are expected to be finalised in the later part of 2009
• Manufacturing of a clinical grade CMRF-56 antibody, a monoclonal antibody developed in-house for the isolation of blood DC from patients. This was completed in partnership with QGEN Pty Ltd (a QLD based contract manufacturing biotechnology company).

Goals for 2009
• Complete the data analysis and report the outcomes from the completed BDCA-1 BDC trial
• We are in the final stages of initiating a second clinical trial of immunoselected BDC for the treatment of PC. This trial will utilise the MMRI’s own CMRF-56 antibody to select the blood DC.

Commercial collaborators
QGEN Pty Ltd
Miltenyi Biotec
Adult Stem Cell: Mesenchymal Stem Cell Trials

Principle Investigator:
Professor Kerry Atkinson

Team Members:
Dr Gary Brooke, Senior Research Officer
Dr Rebecca Pelekanos, Research Officer
Mr Tony Rossetti, Senior Research Assistant

In parallel with our laboratory program the Adult Stem Cell Team initiated a clinical trial program using placenta-derived human mesenchymal stem cells (MSC) as potential therapeutic agents in a variety of medical settings where major unmet medical needs occur. The Team manufactured 5 billion human MSC and have infused our first patient with them. This manufacturing is performed under strict Quality Assurance control.

2008 Highlights

- Manufacturing and storage of 5 billion MSC from two placentas
- Infusion of placenta-derived stem cells into our first patient in our first clinical trial: we believe this is the first time that stem cells derived from placenta – an otherwise discarded tissue after delivery – have been used clinically
- Publication in the British Journal of Haematology of our procedure for manufacturing clinical grade stem cells from placenta and their infusion into our first patient.

Goals for 2009

- Expansion of our clinical trial program exploring the use of MSC in the clinic as follows:
  - Professor K Bradstock and Professor D Gottlieb of Westmead Hospital and Dr T O’Brien of Sydney Childrens Hospital - collaborators on our second clinical trial using human MSC entitled “A phase I multicentre open label dose-escalation study of unrelated, MHC-unmatched MSC for the treatment of steroid-refractory acute GVHD in recipients of allogeneic haematopoietic stem cell transplants”.
  - Professor Tim Florin, A/Professor Graham Radford-Smith and A/Professor M McGuckin (MHS, RBWH, QIMR, MMRI). Collaborators on a phase I clinical trial of human placenta-derived MSC in patients with drug-refractory small bowel Crohn’s disease.
  - Dr Dan Chambers, Queensland Lung Transplant Program, Prince Charles Hospital. Collaborator on a phase I clinical trial of human placenta-derived mesenchymal stem cells in patients with obliterative bronchiolitis as a manifestation of lung allograft rejection
  - Professor Michael Feneley (VCCRI and St Vincent’s Hospital, Sydney) and Professor Tom Marwick (Princess Alexandra Hospital and UQ, Brisbane). Collaborators on phase I clinical trial of human placenta-derived mesenchymal stem cells in patients with severe acute myocardial infarction and severe chronic congestive heart failure.
  - Dr David Serisier and Dr Simon Bowler (Mater Adult Hospital, Brisbane). Collaborators on phase I clinical trial of human placenta-derived mesenchymal stem cells in patients with severe cystic fibrosis, interstitial pneumonitis, obliterative bronchiolitis and asthma.
Palliative Care Team

Team Leader: Prof Janet Hardy BSc, MD, FRACP – Principal Investigator, Clinician in charge

Team Members:
RN Angela O’Shea, Clinical Trials Coordinator
RN Helen Anderson, Research Nurse
RN Decima Jones, Clinical Nurse/recruitment
Ms Alice Pinkerton, Data Manager

Project
- Mater Palliative Care research team develops and runs clinical trials suited to the palliative care population that involves pain and symptom management
- Trial programs comprise both investigator driven and pharmaceutical company sponsored studies. Mater Hospital is a key site within a national multi-site Palliative Care Clinical Studies Research Collaborative (PaCCSC)
- Collaborative (PaCCSC), evidence based, aims to improve the affordable access to key medications for symptom control within the community.

2008 Highlights
- Development of a comprehensive research program encompassing both pharma-and on-pharmaceutical-led studies of symptom management
- Recruited to trial, approximately 25% of all new patients to the palliative care service (a total of 117 patients recruited to date)
- Key member of PaCCSC
- Highest national recruiter to PaCCSC trials (42% of all patients recruited to date)
- 6 other investigator driven and/or sponsored trials approved by HREC and recruiting
- Completion of ‘The Efficacy of Haloperidol in the Management of nausea and vomiting in patients with advanced cancer’
- Development of key collaborations with UQ, QUT, Flinders University and the Australian Centre for Paediatric Pharmacokinetics
- Dr Clare White granted an MD for her work conducted at the Mater Hospital on the views of palliative care patients and their relatives towards research

Goals for 2009
- Evaluation of the validity of measuring oxycodone concentrations for PK studies in palliative care patients. The team will look to expanding and developing an updated protocol and submit applications for further funding
- Commencement of 2 PhD students to assist with the day to day running of the study
- Exceed recruitment targets through our participation with the PaCCSC national project
- Develop and gain ethics approval for a further two studies that will complete our goal of researching the main symptoms associated with advanced cancer. These studies are:
  - Management of nausea in patients with advanced cancer
  - Intranasal midazolam spray for patients with dyspnoea (breathlessness).
Multiple Myeloma (MM) Team

Principle Investigator: Professor Derek Hart
Team Leader: Dr Slavica Vuckovic
Team Members:
Dr Frank Vari, Senior Research Officer
Mrs. Hui Tong, Research Assistant
RN Sonial Hancock, Clinical Trials Nurse
Ms Jennifer Hsu (Nee Freeman) PhD Student

Myeloma is cancer of the blood, where plasma cells, that ordinarily produce antibodies to protect the body, become cancerous.

Projects
• MMRI is in the advanced pre-clinical stages of developing novel immunotherapies for MM
• We have developed a DC vaccine for MM and are working towards bringing this into the clinic in the near future. This treatment aims to stimulate the immune system to fight cancer by providing a stimulus to strengthen a overwhelmed immune system so it can resist the cancer, in much the same way it would any infection
• The team is also trying to understand how DC interact with myeloma in a new model system, developed at the MMRI, where human cells grow and develop in a mouse. We expect to learn new ways of controlling myeloma disease in the bone marrow by modifying the interactions between DC and MM. Further we are developing new ways to target myeloma by developing killer cytotoxic T cells (CTL) against myeloma so, in future trials, we can administer DC and CTL together to eliminate myeloma disease. The team hopes that both of these components, working alongside of each other, will produce a more effective and less toxic therapy for MM.

2008 Highlights
• Generated CTL from MM patients against novel MM tumour associated antigens (TAA). We have identified a number of good candidate antigens that we will target in new approaches to attacking myeloma in both the test tube and in our new, humanised mouse model of myeloma
• Developed a method for the expansion of anti-myeloma CTL from peripheral blood and bone marrow mononuclear cells using immobilised CD3/CD28 beads in media supplemented with 1L-2. This method expanded peripheral blood T cells, on average, by 100 fold and bone marrow T cells 50-100 fold
• Developed a preclinical laboratory model which replicates the features of MM in the clinical situation and began to develop the approach where CTL and injected into mice with human myeloma disease. We have shown that CTL can survive and grow in these mice. This model will be critical in future assessments of the efficacy of anti-myeloma immunotherapies.

Goals for 2009
• Prepare for an immunoselected CMRF-56+ blood dendritic cell (BDC) clinical trial for MM immunotherapy
• Test in vivo the new targets we have discovered for myeloma immunotherapy
• Improve myeloma treatment by combing passive (T cell) and active (DC) immunotherapy and testing it in vivo.
The Mater is a significant part of the Queensland community and has always enjoyed community support in delivering its unique brand of healthcare. The establishment of the Mater Medical Research Institute (MMRI) has further enhanced this position.

Over the last decade, the Mater Foundation has supported the MMRI by raising funds to support research programs. A particular emphasis in recent years has been on prostate cancer. The Prostate Cancer Campaign is aiming to raise $5 million towards prostate cancer clinical trials at the MMRI and the Mater Foundation would like to take this opportunity to thank the many people who have contributed to this campaign.

The value of fundraising is seen in the nature of projects that are funded and, ultimately, the impact they have on people. Research undertaken at the MMRI has the potential to improve the lives of people all over the world and the Mater Foundation is proud to be working with Professor Derek Hart and his talented team to achieve this end.

Thank You
Nigel Harris
2008 Donor list

**250,000+**
- Mr Simon George Snr

**100,000-249,999**
- Smiling for Smiddy Challenge

**50,000-100,000**
- Hotel Care Week 2008
- Dr John Morris
- Incolink
- Mr & Mrs Patrick & Patricia McMonagle

**20,000-49999**
- Bartent Pty Ltd
- Mater Foundation Rendezvous with Romance Ball
- Lifesaver Foundation
- Port of Brisbane Golf Day
- Construction Income Protection Qld

**10,000-19999**
- Professor Ian and Louise Zimmer
- Mary Ryan Golf Day
- Lions Club of Freemantle
- Arrow Energy
- Wilson HTM Foundation

**5,000-9999**
- The Bernborough Club
- Mater Foundation Fashion Parade 2008
- Mr Barry Enkelmann
- Mater Foundation Ladies Lunch 2008
dell ‘Ugo Southbank
- Lions Club of Australind
- Cory Charitable Foundation
- The Modern Group
- Mary Lakey’s Movie Night

**1,000-4,999**
- Sr Deidre Gardner
- Professor Peter Brooks
- Dr Carrie Hillyard
- Mater Foundation September Breakfast 2008
- Campbell Brothers Limited
- John Holland Pty Ltd
- CSTC Pty Ltd
- Pradella Group of Companies
- RAAS Golf Day
- DibbsBarker
- Mr & Mrs Gavin and Karen Bird
- Dr Mark Burgin
- Brookwater Golf Club
- Fundraising Efforts of Mater Hospitals - Engineering Dept
- Lions Club of Brisbane - The Gap
- Lions Club of Leschenault (Bunbury)
- Lions Club of Busselton
- Lions Club of Brisbane Bardon Inc
- Lions Club of Dunsborough
- Mr Lionel Morris
- Mr Dan Hunt
- Mr and Dr William and Pam Turnock
- Mr Bruce Scott

**500-999**
- Lions Clubs International - District 201V5
- Incorp
- Lions Club of Palm Beach Currumbin
- Lions Club of Castle Hill
- Department of Mines and Energy
- ANZ Bank Garden City
- Mr David Harrison
- Mr Paul Reis
- Lions Club of Bonville Sawtell Inc
- Lions Club of Boyup Brook
- Lions Club of Robina
- Lions Club of Healesville
- Rotary Club of Rockhampton West
- Mr Neil Ferguson
- Mr David Whelan
- Mr Aubrey Swift
- Captain Steve Pelecanos
2008 Financials

Total budget for 2008 was $8,940,000

2008 Income

2008 Expenditure
## 2008 Patents

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<td>Dendritic cell-specific antibodies</td>
<td>PCT/NZ97/00134</td>
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<td>Dendritic cell-specific antibodies and methods for their preparation</td>
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<td>10 Dec 2007</td>
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MMRI 2008 Publications

Published:

1. Adams RJ, Heazlewood SP, Gilshenan KS, O’Brien M, McGuckin MA, Florin TH. IgG antibodies against common gut bacteria are more diagnostic for Crohn’s disease than IgG against mannan or flagellin. Am J Gastroenterol. 2008;103:386-396


29. Every AL, Chionh YT, Skene CD, McGuckin MA and Sutton P. Muc1 limits Helicobacter felis binding to gastric epithelial cells but does not limit colonisation and gastric pathology following infection. Helicobacter 2008;13:489-93


37. White C, Hardy J. Gatekeeping from palliative care research trials. Progress Palliat Care 2008;16(4):1-4


In Press:


Book Chapters:


Collaborators

Prof. Perry Bartlett, QBI, UQ
Prof. Thomas Boren, Umea University, Sweden
Prof. Judith Clements, School of Life Sciences, QUT
Prof. Pascale Cossart, Institute Pasteur, Paris, France
Prof. David Currow - Dept Palliative & Support Services, Flinders University
Prof. Francesco Dazzi, Imperial College, London
Prof. Anne Dickenson University of Newcastle-Upon-Tyne
Prof. Michael Feneley, VCCRI, Sydney
Prof. Christopher Goodnow, ANU
Prof. D Gottlieb, Westmead Hospital
Prof. Peter Gray, AIBN, UQ
Prof. Richard Harvey, VCCRI, Sydney
Prof. Adrian Herington, IHBI, QUT
Prof. David Johnson, PAH
Prof. Melissa Little, IMB, UQ
Prof. Cornelis Melief, Leiden University
Prof. Lars Nielsen, AIBN, UQ
Prof. Geoff Osborne, QBI, UQ
Prof. Christopher Parish, ANU
Prof. Lewis Perrin, Gynaecologic Oncology, MAH
Prof. Brent Reynolds Queensland Brain Institute QBI
Prof. Ranjeny Thomas, Diamantina Institute, UQ
Prof. Michael Waters, IMB, UQ
Prof. Robert Williamson, University of Melbourne
Prof. Patsy Yates, School of Nursing and Midwifery, QUT

A/Prof. Ross Barnard, UQ
A/Prof. Ken Bradstock, Westmead Millennium Institute
A/Prof. Glenda Gobe, UQ
A/Prof. Sean Grimmond, IMB, UQ
A/Prof. Darren Higgins, Harvard Medical School
A/Prof. Geoff Hill, QIMR
A/Prof. J Alejandro Lopez, QIMR
A/Prof. Steve Mahler, AIBN, UQ
A/Prof. George Mendz, University of NSW
A/Prof. Geoff Mitchell - Discipline of General Practice, School of Medicine
A/Prof. Ross Norris and A/Prof Bruce Charles – Australian Centre for Paediatric Pharmacokinetics, Mater Pharmacy Services
A/Prof. Yin Xiao, QUT, Australian Red Cross Blood Service, Sydney Children’s Hospital, Westmead Hospital, Sydney
A/Prof. Ernst Wolvetaeg, AIBN, UQ

Dr Simon Bowler, Respiratory Medicine, MAH
Dr Chris Blair, VCCRI
Dr Katleen Braet, UQ
Dr Laurence Catley, MAH
Dr Lisa Chopin, IHBI, QUT

Dr Matt Cook, ANU
Dr Andrew Cotterill, MCH
Dr Paul Dawson, School of Biomedical Sciences, UQ
Dr Andre Dubois, Uniformed Services University of the Health Sciences, Bethesda, USA
Dr Niclas Karlsson, University of Galway, Ireland
Dr Victoria Korolik, Institute for Glycomics, Griffith University, Miltenyi Biotec
Dr Alfred Lam, Griffith University
Dr Richard Lock, Children’s Cancer Institute Australia for Medical Research
Dr Daniel Markovich, School of Biomedical Sciences, UQ
Dr Anthony Moreman, University of Georgia, Atlanta, USA
Dr Ross Norris, MHS
Dr Andreas Obermair, Queensland Centre for Gynaecological Cancer
Dr T O’Brien of Sydney Childrens Hospital
Dr Allison Pettit, IMB, UQ
Dr Louise Purton, Massachusetts General Hospital, Boston, USA
Dr Chris Pyke, MHS
Dr Graham Radford-Smith, Royal Brisbane Hospital/QIMR
Dr Liza Raggatt, IMB, UQ
Dr David Roberts, Centre for Cancer Research, Bethesda, Maryland, USA
Dr Robyn Rodwell, Queensland Cord Blood Bank
Dr David Serisier, Respiratory Medicine, MAH
Dr Natalie Sim’s, St Vincent’s Institute, Sydney
Dr Ljubov Simson, ANU
Dr Phil Sutton, University of Melbourne
Dr Matt Sweet, IMB, UQ
Dr Peter Swindle, MHS
Dr David Thornton, Wellcome Trust Centre for Cell Matrix Research, Manchester (UK)
Dr Nick Timmins, AIBN, UQ
Dr Faten Zaibak, University of Melbourne
Dr Andrew Zannettino, Institute for Medical and Veterinary Science and the Hanson Institute, Adelaide

AIBN - Australian Institute for Bioengineering and Nanotechnology
ANU - Australian National University
DI - Diamantina Institute, UQ
IHBI - Institute of Health and Biotechnology, QUT
IMB - Institute for Molecular Biology
MAH - Mater Adults Hospital
MCH - Mater Children’s Hospital
MHS - Mater Health Services
QBI - Queensland Brain Institute
QIMR - Queensland Institute of Medical Research
QRI - Queensland Radium Institute
QUT - Queensland University of Technology
UQ - University of Queensland
VCCRI - Victor Chang Cardiac Research Institute
Awards, Education, Seminars and Symposiums

MMRI believes that continued professional learning is essential for scientific advancement and discovery. In 2008 MMRI played host to 25 Seminar Sessions and two major Symposiums. These sessions, which are at-no-cost to attendees, are also open to scientists and collaborators across the globe.

2008 Medals and Student Awards

MMRI recognises the achievements of outstanding team members by awarding the Sister Madonna Josey Medal for outstanding contribution to the Institute and the Sister Mary Regis Dunne Medal for outstanding scientific contribution.

2008 Recipients

Sr Madonna Josey Medal – Nicole Shively
Sr Mary Regis Medal – Dr Ingrid Winkler
Summit Fleet Leasing Student Award
Congratulations to Melinda Kambouris who received first prize for her research into making bone marrow transplantations safer and more effective. This is the second year Melinda has won this award.
The runner up, Andrew Kassianos, also received an award for his research into breast cancer treatment.

DC Symposium

“Dendritic Cells in Transplantation”
7th - 8th August 2008

Platinum Sponsor: Miltenyi Biotec
Also supported by: Genzyme

Mucosal Diseases Symposium

“Biological Basis of Gastric & Intestinal Inflammation”
20th - 21st October 2008

Platinum Sponsor: Abbott

2008 Education Committee

A/Prof Jean-Pierre Levesque (Chair)
Dr Gary Brooke (Deputy Chair)
Nicole Shively
Dr Hannah Cullup
Dr Rajaraman Eri
Andrew Kassianos (student)

2008 Honours Completions

Indrajit Das (Inflammatory Bowel Disease)
1st Class
Shusei Fukuyama (DC Growth and Differentiation) 2B
Laura Sinfield (Bone Marrow Transplantation)
1st Class
Naomi Stark (Mucin) 1st Class

2008 Masters Completions

Maria-Anna D’Souza (Haematopoietic Stem Cell)

2008 PhD Completions

Brie Turner (Bone Marrow Transplantation)
Adam McKinlay (DC Growth & Differentiation)
Melinda Hardy (DC Cancer)

National Science Week Road Show

This year MMRI received a grant of $15,000 from the Australian Government’s Department of Innovation, Industry, Science and Research to host the National Science Week Road Show. This Road Show allowed MMRI Scientists to visit primary schools and community groups in Cairns, Mt.Isa, Mackay and Bundaberg.

MMRI High School Student Program

Scientists at MMRI are passionate about sharing their knowledge with enthusiastic and bright students, and in 2008 the team facilitated senior school students from Sommerville House.
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<td>Dr John Hooper</td>
<td>QUT – IHBI:</td>
<td>“The cell surface glycoprotein CDCP1 is metastasis associated, hematopoietic associated and epithelium associated - but what does it do?”</td>
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<td>02/05/2008</td>
<td>MMRI Team Leaders</td>
<td>MMRI</td>
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<td>16/05/2008</td>
<td>Kate Markey</td>
<td>QIMR</td>
<td>Soluble lymphotoxin plays a critical role in GVHD</td>
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<td>23/05/2008</td>
<td>Dr Sean Grimmond</td>
<td>IMB, UQ</td>
<td>Sequencing the mammalian Transcriptome</td>
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<td>06/06/2008</td>
<td>Prof Kerry Atkinson</td>
<td>MHS/MMRI</td>
<td>Biotherapy Program Overview</td>
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<td>Dr Ingrid Winkler</td>
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<td>Current Advances in HSC</td>
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<td>20/06/2008</td>
<td>A/Prof Rod Dunbar</td>
<td>University of Auckland, NZ</td>
<td>Targeting vaccines to human Antigen-Presenting Cells: which APC?</td>
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<td>04/07/2008</td>
<td>Prof Rob Capon</td>
<td>IMB, UQ</td>
<td>Marine Biodiscovery: from Biodiversity to Bioactives and Beyond</td>
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<td>11/07/2008</td>
<td>Phil Kearney</td>
<td>Merck Sharpe &amp; Dohme Australia:</td>
<td>Biography</td>
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<td>18/07/2008</td>
<td>Rob Crombie</td>
<td>Arana Therapeutics</td>
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<td>01/08/2008</td>
<td>Prof. Peter Kubes</td>
<td>University of Calgary, Canada</td>
<td>Lymphocyte trafficking during inflammation</td>
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<td>05/09/2008</td>
<td>Mireille Lahoud - WEHI</td>
<td>WEHI</td>
<td>Dendritic Cell Surface Molecules: From Identification to function</td>
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<td>12/09/2008</td>
<td>Kristen Gilshenhan</td>
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<td>Statistics for Medical Research</td>
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<td>19/09/2008</td>
<td>Jacaranda Van Rheezen</td>
<td>St Jude's</td>
<td>Post Doc opportunities at St Jude's, Memphis, TN, US</td>
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<td>03/10/2008</td>
<td>Prof Nick Fisk</td>
<td>UQ</td>
<td>Fetal stem cells in maternal and fetal tissue repair</td>
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<td>10/10/2008</td>
<td>Georgina Clark</td>
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<td>17/10/2008</td>
<td>Prof. Stuart Kellie</td>
<td>QUT</td>
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<td>24/10/2008</td>
<td>Laurence Catley</td>
<td>Mater</td>
<td>Current advances in hematology</td>
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<td>07/11/2008</td>
<td>Dr. Saparna Pai</td>
<td>PA</td>
<td>Diabetes</td>
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<td>14/11/2008</td>
<td>Prof. Sriprakash kadaba’</td>
<td>QIMR</td>
<td>Bacterial vaccines-Confirmed</td>
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### Peer Reviewed Grant Funding

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<tr>
<th>Funding Body</th>
<th>Chief Investigators</th>
<th>Type</th>
<th>Program</th>
<th>Title</th>
<th>Years</th>
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<td>Cook, Matthew</td>
<td>PhD Scholarship</td>
<td>Biotherapy</td>
<td>Comparison of mesenchymal stem cells (MSC), haematopoietic progenitor cells (HPC), endothelial progenitor cells (EPC) and proangiogenic macrophages (PM) for migration to, and repair of, cardiac damage after acute myocardial infarction</td>
<td>2008-2009</td>
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<td>Florin, Timothy</td>
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<td>Improving patient outcomes through better understanding of metabolism of thiopurine drugs</td>
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<td>Australian Stem Cell Centre</td>
<td>Atkinson, Kerry</td>
<td>Project Funding</td>
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<td>Determination of molecular homing mechanisms of MSC to infarcted myocardium and assessment of impact on cardiac function</td>
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<td>Kollar, Katarina</td>
<td>PhD Top Up Scholarship</td>
<td>Biotherapy</td>
<td>Analysis of the molecular homing mechanisms of MSC to damaged organs, using acute myocardial infarct as a model and the ability of MSC to improve cardiac function after AMI</td>
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<td>Levesque, Jean-Pierre</td>
<td>Fellowship</td>
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<td>Basic biology of the haematopoietic system and therapeutic applications for the treatment of cancers</td>
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<td>A Novel Strategy for the Discovery and Validation of new Targets for Leukaemia Immunotherapy</td>
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<td>Characterisation of CD1c+ as a biomarker</td>
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<td>Turley, Paul</td>
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<td>Potential new target molecules for AML treatment: the role of the 35-L5 molecule</td>
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<td>To further define tumour antigen targets for dendritic cell-based immunotherapy in multiple myeloma</td>
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