

For 2012, 21 Research grants were awarded totalling \$730,930

Ladies Committee Sr Mary Bernice Research Grant - \$80,000

"Identification of MicroRNAs that predict treatment success in patients with acute Myeloid Leukaemia"

Principal Investigator - Prof David Ma

Identification of small genes that predict treatment success in patients with acute Myeloid Leukaemia

The outcome of this proposal will be the generation of the first dataset that specifically analyses microRNA expression in patients who relapse. Our aim is to identify microRNAs that are predictive of a patient's risk of relapse that also function as biomarkers. This data will be a significant resource to the research community and will drive further work on our laboratory to develop less invasive biomarkers such as serum microRNA expression to allow more timely treatment of patients who relapse.

St Vincent's Centre for Applied Medical Research

Adult Stem Cell Research Grant 1 - \$30,000

"Improving the scope and sensitivity of donor chimerism monitoring post stem cell transplant by fluorescence in situ hybridisation (FISH) using cell separation and deletion polymorphism detection"

Principal Investigator - Dr Robyn Lukeis

Improved monitoring of donor and recipient cells after stem cell transplantation

Current laboratory methods for monitoring the course of stem cell transplants have relatively low sensitivity and are limited to cases with a sex-mismatch between donor and recipient. We propose to use cell-of-interest separation techniques to more accurately monitor transplant kinetics over time. We also propose to introduce a method for distinguishing donor and recipient cells in the sex-matched setting. This technique could have other applications in organ transplantation, including investigation of graft rejection.

St Vincent's Hospital

Adult Stem Cell Research Grant 2 - \$50,000

"Role of microRNAs in Haematopoietic Stem Cell Differentiation and Acute Leukaemia"

Principal Investigator - A/Prof Anthony Dodds

The regulation of blood stem cell maturation by small regulatory genes

We have identified three key genes that are linked with blood cell development and are found to be at increased levels in a specific subtype of leukaemia that is characterised, in part, by a failure to mature into normal white cells. We hypothesise that these genes are critical for normal white blood cell development, and abnormal high expression contributes to the inception of acute myeloid leukaemia by stopping stem cells from maturing into normal white cells.

St Vincent's Centre for Applied Medical Research

Di Boyd Cancer Research Grant & K&A Collins Cancer Research Grant - \$80,000

"Creation of "cancer-proof" cells using genetic engineering to vary the mutational stability of the human TP53 gene"

Principal Investigator - Prof Richard Epstein

Why do human 'anti-cancer genes' contain so many mutation-prone sequences? An attempt to create 'cancer-proof' cells by improving gene stability

More than 50% of human cancers contain errors affecting the TP53 tumour suppressor (cancer-preventive) gene. These errors mainly occur at DNA sequences called CpG sites which are prone to mutation. Alterations at these sites cause cancers to become refractory to treatment. This project aims to explain why genes have evolved to contain these weaknesses. If our hypothesis is correct, it should become possible to create stem cells with reduced CpG content, permitting strategic grafting of cancer-resistant cell lineages into selected patients.

Garvan Institute of Medical Research / Kinghorn Cancer Centre

Tancred Trust Research Grant - \$50,000

"Esmolol cardioplegia as an alternative to hyperkalaemic cardioplegia: Using a rodent model of brain death to assess a novel preservation solution in cardiac transplantation"

Principal Investigator - Prof Peter Macdonald

Development of a novel cardiac preservation solution to maximise utility of the donor heart: Overcoming cardiac dysfunction due to donor brain death and improving the current standard of care in cardiac transplantation.

This project aims to develop a novel preservation solution for storage of hearts during retrieval for cardiac transplantation.

Preservation solutions used world-wide have certain limitations and post transplant 'graft dysfunction' is still a significant concern. Victor Chang Cardiac Research Institute has pioneered research into improving existing preservation solutions with significantly superior results seen in these hearts following transplantation.

We aim to further improve these results to overcome persisting limitations in the current preservation solutions in order to further reduce 'graft dysfunction' post transplantation.

Victor Chang Cardiac Research Institute

Froulop Research Grant - \$28,000

"Beat to beat variability of QT interval and stratification of risk for sudden cardiac death in long QT syndrome"

Principal Investigator - A/Prof Rajesh Subbiah

Predicting risk of sudden cardiac death in patients with long QT syndrome

Implantable cardioverter defibrillators are very useful for terminating life threatening disturbances of the rhythm of the heartbeat. However these devices are very expensive and have numerous side effects. At present we cannot predict, with sufficient accuracy, which patients will truly benefit from having an implantable cardioverter defibrillator. In this study we will assess a new marker to stratify risk of sudden death. If successful, it will enable us to target implantable defibrillators to those who will derive most benefit.

St Vincent's Hospital / Victor Chang Cardiac Research Institute / University Hospital London, Ontario, Canada

Annual Grant 1 - \$28,000

"Medicare usage in chronic hepatitis C (MUCH-C) study"

Principal Investigator - Dr Mark Danta

Medicare usage in chronic hepatitis C (MUCH-C) study

Hepatitis C (HCV) poses a substantial health burden on the Australian health care system but there is a paucity of economic studies on its direct impact. Most of the large analyses are based on mathematical modeling rather than direct costing which is aimed at evaluating treatment cost-effectiveness. The aim of this unique national study is to quantify the use and cost of Medicare funded services by people infected by HCV using data from the Medicare Benefit Schedule (MBS) database. People identified with HCV will have all their items claimed through Medicare collected between 2005-2010. Factors affecting cost and use of MBS services in these individuals will be analysed. This study has the potential to improve the health outcomes of people with HCV through better informing clinicians and policy makers involved in HCV care delivery, thereby ensuring that scarce health resources are used in the most effective and efficient manner possible.

St Vincent's Clinical School

Annual Grant 2 - \$30,000

"Non-invasive detection of cardiac transplant rejection using advanced cardiac MRI and ultrasound techniques - Correlation with biopsy"

Principal Investigator - A/Prof Jane McCrohon

Use of non-invasive imaging techniques to guide decision making in the diagnosis and treatment of rejection in cardiac transplant recipients: A pilot study comparing imaging with 'standard of care' clinical assessment and cardiac biopsy findings

To compare advanced cardiac imaging findings with other clinical and biopsy information in defining the presence and severity of cardiac transplant rejection.

Rejection is a key concern particularly in the first 12 months post transplant. Serial invasive cardiac biopsy is the current 'gold standard' for the diagnosis of rejection but remains limited in its accuracy due to sampling errors and assessment of only a small region of the heart accessible to the biopsy needle. This may contribute to overtreatment of patients with powerful immune-suppressing drugs which can lead to increased risk of infection (a key source of morbidity and mortality for the transplant patient). Imaging may provide significant improvement in accuracy and surveillance of transplant rejection.

St Vincent's Hospital

Annual Grant 3 - \$30,000

"Reducing hospital prescribing errors by enhancing the effectiveness of computerised decision support"

Principal Investigator - Dr Melissa Baysari

Reducing serious prescribing errors by improving decision support

Medication errors represent a significant problem for hospitals with approximately 2% of hospital patients likely to be harmed by a medication error during their hospital stay. Computerised Provider Order Entry (CPOE) systems with computerised alerts are being adopted by hospitals all over the world as a means of reducing medication errors. This project aims to determine whether supplying feedback to doctors about the computerised alerts they receive will improve the effectiveness to reduce prescribing errors and improve patient safety.

St Vincent's Hospital

Annual Grant 4 - \$30,000

"GALT in health (GIS) study"

Principal Investigator - Dr Kersten Kurt Koelsch

Characterisation and quantitation of different lymphocyte subsets in human colon biopsy tissue

We will use a laboratory technique (flow cytometry) to determine the proportions of a variety of white blood cells in colon biopsy tissue from healthy individuals. This study will determine the normal reference ranges for these cells as it is quantifiable in biopsy material. The results of our study will be a valuable reference for studies that investigate underlying pathologies of a range of diseases such as Inflammatory Bowel Disease, Coeliac Disease and/or HIV infection that affect the gut immune system gut.

St Vincent's Centre for Applied Medical Research

Annual Grant 5 - \$50,000

"A longitudinal investigation of the effects of centrifugal continuous flow left ventricular assist devices (LVAD) on haemostatic parameters"

Principal Investigator - Dr Paul Jansz

A study of clotting and bleeding in patients implanted with the continuous flow centrifugal left ventricular assist device

One of the major problems encountered with implantation of the left ventricular assist device used to support the failing heart, is the risk of clot formation leading to strokes. To reduce this risk, patients are usually commenced on warfarin and dual anti-platelet therapy. This practise is not evidenced based. Hence, we propose to investigate both markers that promote clotting and markers that promote bleeding with the intent of formulating an algorithm that will tailor anticoagulation and anti-platelet use.

St Vincent's Hospital / St Vincent's Centre for Applied Medical Research / Victor Chang Cardiac Research Institute

Annual Grant 6 - \$30,000

"Long term behavioural, clinical and immunovirological outcomes in individuals previously treated for acute hepatitis C"

Principal Investigator - Dr Gail Matthews

Long term outcomes in people treated for acute hepatitis C

167 patients who enrolled previously in an Australian study involving treatment for acute hepatitis C (HCV) infection are now between 4 and 8 years from initial infection. Very little is known about this period and whether treatment at an early stage continues to be beneficial to people. We propose in this study to bring back people who took part in the original treatment to assess their health and behaviour, including whether they remain clear of HCV infection.

St Vincent's Hospital

Annual Grant 7 - \$40,000

"Link between quinolinic acid and tauopathy in Alzheimer's disease, diabetes and multiple sclerosis"

Principal Investigator - Prof Bruce Brew

Involvement of the neurotoxin quinolinic acid in Alzheimer's disease, diabetes and multiple sclerosis

This study aims to determine if abnormal increases of the neurotoxin quinolinic acid (QA) promote nerve cell death in the brains of patients with Alzheimer's disease, diabetes and progressive multiple sclerosis. Furthermore, the study could open a new therapeutic window for these three diseases using our antibodies against QA.

St Vincent's Hospital

Annual Grant 8 - \$30,000

"Investigation of the role of KCNH2 Isoforms in Schizophrenia"

Principal Investigator - Prof Terry Campbell

How do KCNH2 potassium channels contribute to the pathogenesis of schizophrenia?

Schizophrenia is a debilitating illness that is difficult to treat. Recently, it has been shown that single nucleotide polymorphisms (SNPs) in the KCNH2 gene are more common in patients with schizophrenia when compared to a healthy control group. The presence of the SNPs is associated with altered function of an ion channel. The proposed project is targeted towards determining the role this altered ion channel plays in patients with schizophrenia and its implications for treatment.

*Victor Chang Cardiac Research Institute / Schizophrenia Research Institute / Neuroscience Research
Australia*

Multidisciplinary Patient Focussed Grant - \$30,000

"Impact of advanced liver disease clinic study"

Principal Investigator - Ms Zoe Potgieter

This study will evaluate the impact of the establishment of an advanced liver clinic for the management of cirrhosis at St Vincent's Hospital. Specifically, it will involve an assessment of interventions to reduce the morbidity and mortality associated with liver disease, quality of life and quality assurance of the intervention.

St Vincent's Hospital

Multidisciplinary Patient Focussed Grant - \$20,000

"Towards reducing blood product usage in cardiothoracic surgery"

Principal Investigator - Mr Daniel Behan

This project will employ a truly multi-disciplinary focus to reduce blood product use in patients undergoing cardiothoracic surgery at St Vincent's Hospital. This will include routine cardiothoracic surgical procedures, the implantation of ventricular assist devices as well as heart & lung transplantation. The project will be divided into 4 phases.

The first phase will establish the actual blood product use in cardiothoracic surgery through retrospective data capture of all cardiothoracic surgical procedures for a 1 year period. This will be followed by a second phase of developing clinical guidelines for the use of all blood products. The third phase will be a prospective study with implementation of the guidelines for a 6 month period. The final phase will involve data analysis which will specifically look at any benefits achieved with respect to patient outcomes and cost savings. This stage will permit further refining of the guidelines. We believe that this methodical approach will lead to a more efficient use of blood products, less transfusion-related morbidity in patients and ultimately lead to significant cost savings for the hospital.

St Vincent's Hospital

Multidisciplinary Patient Focussed Grant - \$25,000

"Pressure ulcer prevention and management - an observational study of nursing practice and examination of inter-rater reliability of outcome measurement"

Principal Investigator - A/Prof Elizabeth McInnes

The aim of this project is to provide pilot data for an NHMRC research project application. The NHMRC application will be for a cluster randomised controlled trial on the effectiveness of repositioning and turning for the prevention and management of pressure ulcers. This project will be one of three pilots taking place at different hospital sites to: i) Provide baseline data on pressure ulcer care practices; and ii) To test the reliability of outcome assessment processes.

This study will provide information about the extent of practice variation and a realistic estimate of turning schedules, which will assist the development of a feasible PU repositioning/turning intervention. It will also provide an estimate of the inter-rater reliability of medical record-based outcome assessment and contribute to the development of standardised outcome assessment measures.

Nursing Research Institute, St Vincent's Hospital

Multidisciplinary Patient Focussed Grant - \$25,000

"Pathways to mental health care in diabetes: Implementation and evaluation of a mental health screening and referral procedure for patients with diabetes"

Principal Investigator - Ms Jan Alford

The Pathways to Mental Health Care in Diabetes project aims to improve both mental and physical health for patients with diabetes by improving access to appropriate mental health care. Specifically, this multidisciplinary project (including a team of psychiatrists, researchers, endocrinologist and clinical psychologist, led by the Nursing Unit Manager, Diabetes Centre) will implement and evaluate a simple mental health screening and referral procedure at the Diabetes Services, St Vincent's Hospital.

The first trial of this project will involve the evaluation of adequacy of referral based on a "pen-and-paper" questionnaire screening and subsequent referral procedure, which will inform the development of an internet-based tool.

The second trial will evaluate feasibility and utility of the internet-based mental health screening and referral tool, tailored specifically to the needs of patients with diabetes.

St Vincent's Hospital

Multidisciplinary Patient Focussed Grant - \$24,930

"Improving the Delivery of Allied Health Services to patients with Parkinson's Disease through Telehealth"

Principal Investigator - Ms Judith Rough

Parkinson's Disease (PD) is a chronic, degenerative neurological disease which affects voice and speech in 89% of sufferers. The Lee Silverman Voice Treatment Program is an evidenced-based treatment program which is currently recognised as the most effective behavioural treatment for voice and speech problems associated with PD. However, one of the major principles underpinning the program (the intensity of treatment) is a significant barrier to access for patients with Parkinson's Disease. This study aims to trial a different service delivery model of the LSVT program, using Tele-health technology to enable delivery of the program at home without compromising the principles underlying the LSVT. The significance of this study for patients with Parkinson's disease, if outcomes are similar to face-to-face delivery, is the potential development and regular delivery of the LSVT via Tele-health, thus reducing discrimination due to distance or physical handicap and enabling access to a proven, effective treatment regime. The results of this study will also contribute to the wider body of knowledge relating to treatment of Parkinson's disease and more specifically LSVT.

St Vincent's Hospital

Travelling Fellowship Grant - \$10,000

"Cardiac Research Fellow & PhD Candidate, University of Oxford, Centre for Clinical Magnetic Resonance Research (OCMR) & University of Oxford Department of Physiology, Anatomy & Genetics"

Fellow - Dr Camilla Wainwright

Department of Cardiology

Travelling Fellowship Grant - \$10,000

"Fellowship in Reconstructive Microsurgery, Bellevue Hospital, New York"

Fellow - Dr Rowan Gillies

Department of Plastic & Reconstructive Surgery
