

For 2014, 19 Research grants were awarded totalling \$725,000

SVPHS Ladies' Committee Sr Mary Bernice Research Grant - \$100,000

"A novel zebrafish model of dilated cardiomyopathy"

Principal Investigator - A/Prof Diane Fatkin

A zebrafish model of heart muscle disease

Dilated cardiomyopathy (DCM) is a significant cause of heart failure in the community. Genetic factors contribute to this condition but these are not fully understood. We intend to investigate a new zebrafish model of inherited DCM, initially by identifying the causal genetic defect, then by exploring how this gene defect precipitates a rapid and fatal heart failure in the fish. This research should provide a basis for further studies into the genetic causes and potential treatment of human DCM.

Victor Chang Cardiac Research Institute

Adult Stem Cell Research Grant - \$100,000

"Targeting of Leukaemic stem cells by anti-microRNAs to treat acute myeloid Leukaemia"

Principal Investigator - Prof David Ma

Targeting cancer stem cells in human leukaemia using anti-microRNA drugs

A hurdle towards effective treatment of Acute Myeloid Leukaemia is the presence of cancer stem cells, though to be a major reason for treatment failure. We have discovered a small gene, microRNA-10a, that is a vital to its growth. In this study, we aim to use the new "antagomiR" technology to switch off microRNA-10a in a leukaemia mouse model as the step towards using this new treatment for acute myeloid leukaemia.

St Vincent's Centre for Applied Medical Research

Tancred Research Grant - \$50,000

"Molecular determinants of Haematopoietic Stem Cell Ageing and Rheumatoid Arthritis Pathogenesis"

Principal Investigator - Dr John Moore

Investigating the effects of ageing on blood stem cells and the roles in arthritis

Ageing causes a range of abnormalities and defects in the function of blood stem cells. We have identified groups of genes that are expressed differently in young and aged stem cells. In addition, we observed that blood stem cells of arthritis patients share characteristics with aged stem cells, suggesting that these cells are undergoing accelerated ageing. We aim to define these changes and the underlying mechanisms at the level of gene regulation, to ultimately improve patient treatment and survival post-transplantation.

St Vincent's Centre for Applied Medical Research

K&A Collins Cancer Grant - \$50,000

"Understanding the immune mechanisms underlying spontaneous regression of high-grade anal squamous intraepithelial lesions"

Principal Investigator - Prof Andrew Carr

Understanding how the immune system clears anal precancers caused by human papillomavirus type 16

Infection with high-risk type human papillomavirus (HPV) causes cervical cancer in women and anal cancer in men and women. We will look in detail at how the immune system clears precancers at the tissue level.

This has important implications for how to treat HPV-related precancers in order to prevent cancer.

St Vincent's Centre for Applied Medical Research

Thelma Greig Cancer Grant - \$50,000

"DNA methylation biomarkers for Barrett's oesophagus and oesophageal adenocarcinoma"

Principal Investigator - A/Prof Reginald V N Lord

Discovery of biological changes in Barrett's oesophagus and oesophageal adenocarcinoma tissues which can be used to develop blood tests for these diseases

This project aims to analyse both DNA and RNA extracted from oesophageal tissue biopsies to identify a panel of biological markers (biomarkers) for oesophageal adenocarcinoma and its precursor disease, Barrett's oesophagus. The number of new cases of this highly lethal cancer is increasing at a rate faster than any other cancer. The biomarkers, which we aim to use in blood tests, have the potential to improve the outcomes for patients with these diseases through earlier detection and more accurate staging.

St Vincent's Centre for Applied Medical Research

Di Boyd Cancer Grant - \$30,000

"Role of ETS-related gene (ERG) in the pathogenesis of transient myeloproliferative disease and leukaemia in human Trisomy21"

Principal Investigator - Dr Helen Tao

Use of patient derived stem cells to study the role of ERG in abnormal blood cell development in Down Syndrome

Down syndrome (DS) children have higher risk of developing potentially fatal blood cancers, thought to be instigated by the abnormal presence of three copies of ERG, a gene essential for controlling normal blood stem cell growth. We propose to determine how ERG may cause the abnormal blood stem cells observed in DS children using patient specific stem cells created from DS skin cells. Understanding how ERG works could provide new insights into stem cell based therapy to prevent onset of leukaemia.

St Vincent's Centre for Applied Medical Research

Combined Froulop Research & Annual Grant - \$50,000

"Fetal programming of cardiovascular disease risk"

Principal Investigator - A/Prof Catherine Suter

Fetal origins of heart disease

Studies over the last few decades have indicated that a mother's nutritional status – including undernutrition as well as obesity and diabetes – increases their children's risk of metabolic syndrome and heart disease. In our community where almost 65% of the adult population are overweight or obese, more and more children carry this increased risk. But the underlying mechanism is a mystery. We will use mouse models of maternal under- and over-nutrition to ask whether small RNAs are involved.

Victor Chang Cardiac Research Institute

Annual Grant 1 - \$30,000

"Exploiting new opportunities with an electronic prescribing system to identify prescribers at risk of making prescribing errors"

Principal Investigator - Dr Melissa Baysari

Exploiting new opportunities with an electronic prescribing system to identify prescribers at risk of making prescribing errors

Medication errors represent a significant problem for hospitals worldwide with prescribing errors reported to be the most frequent and harmful. As medication management in Australian hospitals shifts from paper to electronic formats, an exciting new opportunity has arisen to utilise the large electronic datasets created by electronic prescribing systems to understand variation in prescribing error rates among doctors and identify prescribers at risk of making prescribing errors.

St Vincent's Hospital

Annual Grant 2 - \$30,000

"Identifying hospitalised patients at high risk of potentially avoidable readmission"

Principal Investigator - Dr Blanca Gallego Luxan

Identifying hospitalised patients at high risk of potentially avoidable readmission

This project aims to produce a readmission risk score that can be used to target patients who are at high-risk of potentially avoidable readmission. Unplanned returns to hospital represent a significant problem for patients and cost Australians billions of dollars per annum. Identifying the patients most likely to benefit from action before discharge can help clinicians and hospital administrators design effective interventions.

This project will inform an NHMRC partnership grant that, if successful, will enable us pilot specific interventions.

St Vincent's Hospital

Annual Grant 3 - \$30,000

"Vitamin D dosing study in Intensive Care Unit (ICU) patients with the Systemic Inflammatory Response Syndrome (SIRS)"

Principal Investigator - Dr Priya Nair

Vitamin D dosing study in critically ill patients with inflammation

In this project, we will study critically ill patients who have signs of inflammation. Vitamin D deficiency is extremely common in these patients. We want to study the effect of supplementation in them by administering a vitamin D injection followed by measurement of vitamin D metabolites and inflammatory markers in the blood at specific times. This study is vital for a planned large study which will look at the effect of supplementation on outcomes in patients from multiple ICUs across Australia.

St Vincent's Hospital

Annual Grant 4 - \$30,000

"Bad bugs need well administered drugs"

Principal Investigator - Prof Deborah Marriott

How can we do better? Measuring antibiotic levels to improve patient outcome in serious blood stream infections

Despite the availability of effective antibiotics, bacterial infections of the blood stream are fatal in approximately 30% of patients. Current antibiotic regimens are 'one size fits all' and may be under-treating many critically ill patients. We will identify all patients with specific bacteria in their blood and measure both the level of antibiotic in the blood and the susceptibility of the organism to an antibiotic to determine the best treatment protocol for each individual patient, reducing patient mortality and improving outcome.

St Vincent's Hospital

Annual Grant 5 - \$30,000

"Development and evaluation of a novel internet-delivered cognitive behavioural treatment for severe health anxiety (hypochondriasis)"

Principal Investigator - Dr Jill Newby

Development and evaluation of the Health Anxiety Program: a new online cognitive behavioural therapy program for people who worry about their health

Many Australians feel anxious about their health, worrying that they have a serious illness that has gone undiagnosed by medical professionals. In this project, we will develop the first online cognitive behavioural treatment program in Australia for people who worry about their health (the Health Anxiety Program). We will conduct a study to explore the outcomes for people to take part in the program, before making it available for Australians in ThisWayUpClinic, our online clinic for depression and anxiety.

St Vincent's Hospital

Multidisciplinary Grant 1 - \$25,000

"Brief intervention for people with Type One Diabetes Mellitus and psychiatric comorbidity"

Principal Investigator - Ms Lisa Robins

The rate of mental illness is two times greater amongst people with diabetes than for the general population. Depression in diabetes is associated with poorer self-management of diabetes and a poorer prognosis in terms of disease severity, complications and mortality. Diabetes-related distress is associated with poorer glycaemic control. Hence, providing psychological support for people with diabetes has the potential to improve physical, as well as mental health outcomes

The Diabetes MILES – Australia 2011 Survey concluded: "Many of those who reported clinically relevant symptoms of depression and/or anxiety appeared not to have received a diagnosis for their condition and were therefore unlikely to be receiving the requisite care, treatment and support. Depression, anxiety and/or diabetes related distress are unlikely to be detected routinely without systematic screening and monitoring. Care must be optimised to ensure that access to psychological support services is available to all who need it".

There is now a strong case for importance of the impact of stress and depression on the onset and course of diabetes and it is particularly clear that early identification and intervention for mental health problems may significantly impact on disease outcomes.

This study combines newly developed internet technology with a trial of a purpose-developed brief intervention for people with diabetes. Both are designed to address each patients specific mental health needs in an appealing format for people at a critical time in their lives. It will assess the efficiency of a brief 3 session psychological intervention to enhance diabetes self management by examining whether glycaemic control is comparatively better, and frequency of presentation to health services decreases, between baseline assessment and follow up in the treatment condition.

St Vincent's Hospital

Multidisciplinary Grant 2 - \$25,000

"Reducing falls among people with Huntington Disease"

Principal Investigator - Mr Kenny Vuong

This is a longitudinal cohort enrolling consecutive patients with Huntington Disease admitted to St Joseph's Hospital for physiotherapy rehabilitation. It aims to prospectively measure changes in gait, fall frequency and function pre/post rehabilitation. It will also explore gait, biomechanical, cognitive and other clinical characteristics as predictors for falls and response to rehabilitation.

St Joseph's Hospital

Multidisciplinary Grant 3 - \$25,000

"The surgical patients' pressure injury incidence (SPPII) study"

Principal Investigator - Ms Jane Rodgers

The primary aim of this study is to investigate the incidence of post-surgical pressure injuries (PIs) among St Vincent's Hospital (SVH) elective surgical patients with a minimum hospital stay of 48 hours as they are

considered to be at elevated risk of PIs (1,2). The study will also identify potentially controllable extrinsic risk factors (for example, intra-operative support surfaces) that may be associated with developing PIs. The incidence of PIs is a major concern to health care systems as they result in longer hospital stays, increased costs and a reduction in patient's quality of life. Although SVH prevalence rate of PI has dropped to 16% according to the last survey, this rate is still above the international benchmark of 12% (3). Our project will directly contribute to addressing this problem by providing much needed data that will a) provide a baseline of PI incidence; b) provide information on the key controllable randomised controlled trial (for which funding will be sought separately in 2014).

Nursing Research Institute / St Vincent's Hospital

Multidisciplinary Grant 4 - \$25,000

"Creating the St Vincent's Hospital Online Cardiac Health Centre"

Principal Investigator - Ms Tamra Langley

To offer a novel and contemporary online cardiac rehabilitation webpage, incorporating current and reliable educational material, resources for cardiology and cardiothoracic patients and interactive educational online webinars. It aims at providing a supplemental resource for patients attending the rehabilitation program and as a primary resource for patients and their practitioners, who are not able to attend a traditional cardiac rehabilitation program. It will become a core method to deliver information, track progress and help individualise patient care.

St Vincent's Hospital

Multidisciplinary Grant 5 - \$25,000

"The reboot pain management program - is cognitive function a predictor of outcome?"

Principal Investigator - Ms Tania Gardner

Evidence suggests that a multidisciplinary pain program (MDPP) is effective for chronic pain patients, however investigations assessing the most effective format of such a program still remain unclear (ref1). The Department of Pain medicine at St Vincent's Hospital, Sydney, has developed a MDPP; the Reboot Pain Management Program (RPMP). Preliminary data suggests the RPMP is effective in improving measures of pain, pain disability and psychological measures of distress (ref2).

Pain research often investigates pain related psychological measures but there is comparatively little research on the impact of chronic pain on cognitive measures such as attention, memory and executive functions. Unlike many other multidisciplinary programs, the exclusion criteria for the RPMP is minimal and as such the proportion of pre-existing mental health problems and complex psychological presentation is high and varied. Knowledge of the cognitive profile of our Chronic pain population may help in determining the most appropriate treatment pathway and assist in designing programs that will best address and facilitate the learning and adaptations required for successful self management of chronic pain. This study aims to gain knowledge of the cognitive profile of patients presenting to the St Vincent's pain clinic and to investigate whether cognitive function is a predictor of RPMP outcomes.

St Vincent's Hospital

Travelling Fellowship Grant 1 - \$10,000

"Echocardiography Fellowship - Kings College Hospital, London, UK"

Principal Investigator - Dr James Otton

St Vincent's Hospital

Travelling Fellowship Grant 2 - \$10,000

"Advanced Endoscopic Ultrasound (EUS) Fellowship, University College, London, UK"

Principal Investigator - Dr Alina Stoita

St Vincent's Hospital
