St Vincent's Clinic Foundation

Research Grants 2017

For 2017, 24 Research grants were awarded totalling $919,916

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

"Dendritic Cell (DC) Nanovesicles: Novel highly active cancer immunotherapy"

Principal Investigator - Dr Peter Manders

DC Nanovesicles: A new, exciting vaccine to prevent and treat cancer

Nanovesicles developed in our laboratory, are a revolutionary new cancer vaccine that activate a patient's own immune system to kill and control cancer cells. They are small particles derived from cells, which differ from previous cancer vaccines in that they can be frozen down, used on demand and modified to treat a wide variety of different cancers. In this project we intend to further optimise their activity, examine whether their use can increase & extend the effectiveness of existing immunotherapies and begin to translate their success from our animal model into humans.

Garvan Institute of Medical Research

Adult Stem Cell Research Grant - $100,000

"Clinical significance of age-associated gene mutations in stem cells"

Principal Investigator - Prof David Ma

Clinical Significance of Age-Associated Gene Mutations in Stem Cells

We have an increasing aging population, yet there are fundamental gaps in our ability to predict and treat blood cell disorders. Low blood cell counts are common in adults, and are risk factors for functional impairment and death. The causes are unknown in many cases, with few effective treatments. Recent studies identified mutation which increase with age, and we will determine which of these cause unexplained low blood cell counts. This will lead to improved diagnosis and treatments.

St Vincent's Health Network Sydney

Tancred Research Grant - $50,000

"Randomised controlled study comparing long term clinical outcomes of patients with acute cardiac rejection diagnosed and treated based on cardiac MRI and Endomyocardial biopsy compared to Endomyocardial biopsy alone"

Principal Investigator - A/Prof Andrew Jabbour

Cardiac MRI Versus Endomyocardial Biopsy in Cardiac Allograft Rejection Detection and Treatment

Enables earlier and more accurate detection of acute cardiac transplant rejection compared to the current gold standard of cardiac biopsy, enabling treatment decisions to be undertaken much sooner, and

potentially prevent longer term adverse outcomes associated with subclinical or underdiagnosed cardiac rejection that is often under or not treated at all with potentially dire consequences of more advanced allograft vasculopathy and left ventricular dysfunction.

St Vincent's Health Network Sydney

K&A Collins Cancer Grant - $50,000

"Improving the classification and management of patients with Barrett's Oesophagus"

Principal Investigator - Prof Reginald VN Lord

Improving the classification and management of patients with Barrett's oesophagus

In Barrett's oesophagus the lining of the lower oesophagus is replaced by a precancerous lining due to gastro-oesophageal reflux disease. Barrett's oesophageal cancer is important because the number of new cases is rising faster than any other cancer and because it is fatal in more than 4 out of 5 patients. We will improve the accuracy of predicting cancer risk in individuals with Barrett's oesophagus by integrating patient clinical data, endoscopic information, and new molecular discoveries.

St Vincent's Health Network Sydney

Thelma Greig Cancer Grant - $50,000

"Metabolic effects of exercise on breast cancer"

Principal Investigator - A/Prof Elgene Lim

Metabolic effects of exercise on breast cancer

Despite the clear epidemiological evidence that physical activity can reduce breast cancer recurrence and risk, little is know about the mechanisms. The aim of this project is determine the metabolic pathways and immunological effects of exercise in different subtypes of breast cancer, and to determine if there are synergistic effects with current systemic therapies.

Garvan Institute of Medical Research

Froulop Research Grant - $30,000

"Modelling variable presentation of primary arrhythmia syndromes using induced pluripotent stem cell derived cardiomyocytes"

Principal Investigator - Dr Adam Hill

Modelling population variability in the severity of heart rhythm disturbances.

Genetic mutations that cause heart rhythm disturbances affect different individuals to different degrees. Understanding this variability in disease severity in the population is critical to effective management of

these patients. We will use stem cell based models to investigate why heart rhythm disturbances affect different people to varying degrees in order to target the most appropriate therapy to the right patients.

Victor Chang Cardiac Research Institute

Annual Grant 1 - $30,000

"Simplified HCV detection through self-collected capillary finger-prick samples"

Principal Investigator - Dr Tanya Applegate

The evaluation of self-collected dried blood spot samples to help diagnose active hepatitis C virus infection and simplify treatment monitoring

Hepatitis C virus (HCV) is a global health crisis. Highly effective and affordable HCV therapies are now available to all Australians and provide an unprecedented opportunity to eliminate HCV in Australia. Simplified and affordable HCV tests are required to achieve this.

This study will assess the detection of HCV in self-collected dried blood spot samples within an existing clinical trial. This method should improve HCV testing among remote and marginalised populations, and simplify treatment monitoring to reduce health care costs.

St Vincent's Health Network Sydney

Annual Grant 2 - $30,000

"Pharmacological conditioning of the donor heart to normalise mitochondrial oxidative metabolism and function: An approach to minimise ischaemia reperfusion injury and maximise heart recovery"

Principal Investigator - Prof Peter Macdonald

Helping the heart to help itself: Activation of survival signalling targeting mitochondria with agents in clinical use as a means to improve the function of "marginal" donor heart models.

Donor heart shortage has forced consideration of hearts from "marginal" donors such as those where otherwise normal hearts have been exposed to an extended cold storage period between organ procurement and re-implantation. The aim of the current project is to maximise recovery of models of marginal hearts with agents that activate the heart's own protective signalling pathways & correct metabolic imbalances. Positive results will suggest further approaches that may significantly increase clinical usage of "marginal" hearts and other transplantable organs.

Victor Chang Cardiac Research Institute

St Vincent's Clinic Foundation

Research Grants 2017

Annual Grant 3 - $30,000

"Contribution of T follicular helper (Tfh) cells to recrudescence from the latent HIV-1 reservoir"

Principal Investigator - Prof Anthony Kelleher

Defining the source of HIV initiating relapse post anti-retroviral therapy

Control of HIV infection off therapy is the next major advance for HIV therapy. Currently HIV returns soon after cessation of antiretroviral drugs. This project aims to describe both the tissue source and the drivers of this recrudescent virus. Once this is understood future therapies can be designed to suppress, control or eliminate this source recrudescent virus in order to effect prolonged remission of infection.

St Vincent's Health Network Sydney

Annual Grant 4 - $30,000

"The TGF-B superfamily cytokine Macrophage Inhibitory Cytokine-1 (MIC-1/GDF15) protects from development of prostate cancer"

Principal Investigator - Prof Samuel Breit

MIC-1/GDF15 protects from prostate cancer

MIC-1/GDF15 is a protein overexpressed by a high proportion of cancer patients. MIC-1/GDF15 is suggested to have a protective role in early cancer but its mode of action is not certain. Our unpublished data, using transgenic TRAMP Pca prone mice shows that MIC-1/GDF15 retards cancer development by stimulating anti-tumour immunity. This project is directed to understanding how MIC-1/GDF15 stimulates anti-tumour immunity - a new arm of cancer therapy. There is potential for clinical application for improving anti-tumor immunity, based on the use of MIC-1/GDF15.

St Vincent's Health Network Sydney

Annual Grant 5 - $30,000

"The safety and pharmacokinetics of metformin in heart failure"

Principal Investigator - Prof Richard Day

Can metformin be safely used in patients with heart failure?

Heart failure is the leading cause of death in 50%-80% of patients with type 2 diabetes. Metformin, a front-line anti-diabetic medicine, has been shown internationally to decrease the mortality of patients with heart failure. However, it is contraindicated in heart failure patients in Australia due to the risk of lactic acidosis, a severe potential adverse effect of metformin. Our study will investigate the safety and benefits of metformin in patients with heart failure, potentially providing a safe outcome to improve outcomes for these patients.

St Vincent's Health Network Sydney

St Vincent's Clinic Foundation

Research Grants 2017

Annual Grant 6 - $30,000

"Preclinical in vivo testing of novel targeted therapies for the treatment of acute leukaemia"

Principal Investigator - Dr Tim Molloy

Testing new therapies for the treatment of acute leukaemia.

Down syndrome-associated acute megakaryoblastic leukaemia (DS-AMKL) and normal karyotype acute myeloid leukaemia (NK-AML) are two potentially fatal blood cancers. The standard chemotherapy-based treatment for both has remained largely unchanged for decades despite poor outcomes for many patients. There is therefore an urgent need to identify new therapeutic strategies for these diseases. To this end, we aim to test for the first time the efficacy of 4 drugs that have been successfully used in other cancers as new treatments for these leukaemia's.

St Vincent's Health Network Sydney

Annual Grant 7 - $30,000

"The kynurenine pathway as therapeutic target for multiple sclerosis"

Principal Investigator - Prof Bruce J Brew, AM

The kynurenine pathway as therapeutic target for multiple sclerosis

Multiple sclerosis (MS) is a disabling neurological disease affecting 23,700 Australians. The current treatments available to MS patients only slow down the disease progression and do not seek to tackle the underlying causes. We have demonstrated that neutralisation with monoclonal antibody against neurotoxin established the neuroprotective effect in in vitro cells. This study will test the anti-quinolinic acid antibody in MS mouse model, which will accurately predict the clinical efficacy and help in drug development for Multiple Sclerosis.

St Vincent's Health Network Sydney

Annual Grant 8 - $30,000

"Understanding drug-induced arrhythmias and structure of the Kv11.1 (hERG) channel"

Principal Investigator - Dr Carus Lau

Understanding drug induced sudden cardiac death

The human ether-a-go-go-related gene (hERG) K+ channels are of great clinical and pharmaceutical importance as they interact with off target medications increasing the risk of cardiac arrhythmias. We are trying to determine the structure of these channels in order to understand how arrhythmias can be induced by drugs and to develop a blueprint for future pharmaceutical design of all classes of drugs to limit the off target effects and increase the throughput of drug development.

Victor Chang Cardiac Research Institute

St Vincent's Clinic Foundation

Research Grants 2017

Annual Grant 9 - $30,000

"Investigating the effects of platelet extracellular vesicles and antiplatelet therapy on colorectal cancer"

Principal Investigator - Dr Joanne Joseph

Investigating how blood thinning drugs affect colorectal cancer.

Platelets are small blood cells that contribute to blood clots. Blood thinning drugs such as aspirin prevents platelets from clotting blood but they can also reduce the risk of colorectal cancer. Platelets release tiny fragments called extracellular vesicles which can be taken up by cancer cells. The genetic material in the extracellular vesicles can have an effect on those cells. This project will investigate the effect platelet extracellular vesicles have on colorectal cancer cells after treatment with blood thinning drugs.

St Vincent's Health Network Sydney

Kavan Migraine Bequest - $50,000

"Investigation of treatment options for refractory migraine"

Principal Investigator - Dr Susan Tomlinson

Investigation of treatment options for refractory migraine

Migraine is more common than asthma and diabetes combined, affecting 16% of the population. In the Global Burden of Disease Survey of 2010, migraine ranked as the third most prevalent disorder and seventh highest specific cause of disability worldwide. Two aspects of migraine management that are notoriously hard to manage are those patients who develop transformed (chronic) migraine, and women with hormonally-sensitive migraine. This research proposal seeks to develop better treatment for both these cohorts migraine patients.

St Vincent's Health Network Sydney

Kinsella Colorectal Bequest - $46,666

"Inflammatory Bowel Disease Research Position"

Principal Investigator - Dr Alissa Walsh

Inflammatory Bowel Disease (IBD) is comprised of two main diseases - ulcerative colitis (UC) and Crohn's disease (CD). The cause of these diseases are unknown and there is no current cure. Most treatment involves suppressing the immune system in order to decrease inflammation in the gastrointestinal tract. There is a high chance that these patients will require surgery throughout the course of their disease. Colorectal cancer is more common in this patient group as compared with the rest of the community and surveillance programs are in place.

CD and UC are chronic diseases that are best treated with multidisciplinary approach including involvement of gastroenterologists, specialist IBD nurses, IBD fellows, colorectal surgeons, radiologists, pathologists and psychiatry.

St Vincent's Clinic Foundation

Research Grants 2017

The IBD Service at St Vincent's is already involved in research through its participation with the Australian New Zealand IBD Consortium. There are now thirteen hospitals actively participating in the consortium which is the largest research program of its kind in Australia.

St Vincent's Health Network Sydney

Kavan Orthopaedic Bequest - $50,000

"Development of Post-Operative Rehabilitation Protocols: Outcomes, Gait Analysis and Compliance"

Principal Investigator - Dr Andrew Higgs

Recovery after a leg fracture: Can we improve results by standardising the physiotherapy program?

After a fracture to the leg recovery is heavily influenced by physiotherapy programs. Most surgeons are not in agreement with the manner in how these programs should be conducted. This can lead to confusion for both the patient and health care provider. A review of current practice of patient rehabilitation and their results at a busy trauma unit will be conducted. These results will then be compared with results after the implementation of a standardised physiotherapy program to determine if results are improved.

St Vincent's Hospital Sydney

Multidisciplinary Grant 1 - $31,000

"Can pain be managed from a distance? A randomised controlled trial of an innovative online multidisciplinary pain management program (Reboot Online) compared to usual care"

Principal Investigator - Ms Tania Gardner

Chronic pain affects one in five Australians and is the leading cause of disability in Australia. We have developed a new internet-delivered multidisciplinary pain management program in Australia (Reboot Online) that teaches people with chronic pain how to self-manage their condition. In a randomised controlled trial, we will compare the benefits of Reboot Online to a control group who received usual care in the community. This trial will be the first in Australia to evaluate a completely multidisciplinary online pain management program, and will lead to a new innovative method to reduce the burden of chronic pain.

St Vincent's Health Network Sydney

Multidisciplinary Grant 2 - $25,000

"The impact of the Mediterranean Diet in cardiac rehabilitation patients, a randomised controlled trial"

Principal Investigator - Ms Carissa Moroney

Coronary heart disease (CHD) is the leading cause of death in Australia and is largely preventable by modifying lifestyle factors including diet.

The Australian Cardiovascular Health and Rehabilitation Association (ACRA) guidelines state there is level 1, grade A evidence that cardiac rehabilitation (CR) after a cardiac event decreases morbidity and mortality and increases quality of life. These guidelines acknowledge that dietary education is a core component of

CR, yet the dietary intakes of this population are largely understudied and evidence on the most effective form of dietary education is limited.

The impact of CR programs on diet quality is unknown and there are no evidence based guidelines to specifically guide dietary education in the CR setting. It is unclear whether individual or group based dietary education is more effective for this population. Considering that the existing literature has highlighted the importance of lifestyle modification for patients with CHD, determining the most appropriate method of delivering dietary education to this group should be determined. Large randomised controlled trials have identified the Mediterranean diet as an effective strategy for prevention of cardiovascular diseases. Despite this, the effectiveness of the Mediterranean diet as an education strategy in the CR setting is unknown.

This study aims to determine the feasibility of providing dietary education within CR using the Mediterranean diet in both group and individual settings. It is hypothesised that dietary improvements will be seen in both groups but the improvement will be greater in those who receive tailored individual education.

This study will randomise consenting participants from the SVH CR program to receive either three one hour individual dietary education sessions or the usual two 90 minute group education sessions. Changes in dietary intake will be measured using a validated assessment tool (MEDAS).

St Vincent's Health Network Sydney

Multidisciplinary Grant 3 - $25,000

"The collaborative development of a smartphone application to promote self-management in out-patients with heart failure"

Principal Investigator - Mrs Leanna Woods

Heart failure is an internationally prevalent and progressive chronic disease. It is well established that heart failure self-management can not only improve clinical outcomes and health related quality of life for the individual , but also decreases costly re-hospitalisations. National Heart Foundation of Australia evidence-based guidelines recommend daily outpatient self-monitoring, however adherence to this recommendation is often suboptimal . Smartphone applications are an innovative approach to chronic disease education that has the potential to improve out-patients' self-management.

This project will develop a smartphone application for outpatients to use in addition to their regular outpatient heart failure clinic care. The smartphone application aims to improve patient symptom self-management and assist with specific guideline requirements such as daily dietary modification and diuretic dose titration, limiting fluid congestion and therefore improving clinical outcomes, enhancing patient self-efficiency and subsequent satisfaction with their disease management.

This nurse led multidisciplinary collaborative project will use participatory design methodology. A structured framework will be used to develop the application. Importantly, this framework engages patients themselves to ensure an appropriately tailored product for the end user.

St Vincent's Private Hospital Sydney

St Vincent's Clinic Foundation

Research Grants 2017

Multidisciplinary Grant 4 - $22,250

"Pilot study: Comparison of DAFNE program vs multidisciplinary type 1 diabetes clinic (standard care) for patients with type 1 diabetes."

Principal Investigator - Ms Leanne Gregory

To examine clinical outcomes in individuals with type 1 diabetes when treated with the DAFNE program versus multidisciplinary standard care over a 12 month period.
Key patient outcome measures include: Glycaemic control; Quality of life; Incidence of severe hypoglycaemia; Weight; Lipids, blood pressure, renal and liver function and urinary ACR.

St Vincent's Health Network Sydney

Travelling Fellowship Grant 1 - $10,000

"Research Fellow at the Toronto Lung Transplant Program, University of Toronto, Ontario, Canada"

Principal Investigator - Dr David Darley

St Vincent's Hospital Sydney

Travelling Fellowship Grant 2 - $10,000

"St Vincent's Cardiology Team to go to Solomon Islands"

Principal Investigator - A/Prof Cameron Holloway

St Vincent's Hospital Sydney
