

In 2006, \$390,000 has been awarded to 13 recipients this year which include an additional Annual Grant and two Travelling Fellowships.

The Ladies Committee Sister Mary Bernice Grant - \$100,000

Dr Romesh Markus - Principal Investigator

**"Acute ischaemic stroke: imaging viable brain tissue with dynamic perfusion computed tomography"
(Identifying potentially viable brain tissue in acute ischemic stroke patients with dynamic perfusion
computed tomography)**

Stroke is the second leading cause of death and the leading cause of disability in the world. Thrombolysis substantially improves outcome in ischemic stroke patients if initiated within 3 hours of onset. However, potentially viable brain tissue ('ischemic penumbra') is present in a significant proportion of ischemic stroke patients presenting even after 3 hours. Rapid identification of ischemic stroke patients with penumbral tissue on perfusion CT may select those most suitable for thrombolysis and extend the time window for treatment.

Research undertaken at St Vincent's Hospital

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

Associate Professor Reginal Lord - Principal Investigator

**"HER-2, EGFR and prognosis for oesophageal adenocarcinoma" (Genetic factors influencing survival for
patients with cancer of the oesophagus)**

The oesophagus is the tube through which food and drinks pass from the mouth to the stomach. Adenocarcinoma is the most common type of oesophageal cancer. This study investigates the influence of two critical genes on survival for patients with oesophageal adenocarcinoma. This information may be useful for choosing the most effective conventional treatment for patients. It could also indicate that new therapies that target specific genes might have a treatment role.

Research undertaken at St Vincent's Hospital

Tancred Trust Research Grant - \$50,000

Dr Ian Sutton - Principal Investigator

"An investigation into the temporal gene expression profiles of microglia and macrophages in relation to the development of axonal injury in experimental allergic encephalitis" (Identification of immune factors that result in neurological disability)

The cause of disability in patients with Multiple Sclerosis (MS) is the loss of brain cell processes termed axons. Macrophages are inflammatory cells that are implicated in the pathogenesis of axonal injury in MS. This study is an investigation of the physiological processes occurring in macrophages that result in axonal injury in Experimental Allergic Encephalitis, an animal model of brain inflammation. The aim of this proposal is to define the mechanism by which macrophage-mediated axonal injury arises.

Research undertaken at Garvin Institute of Medical Research

Di Boyd Cancer Research Grant - \$20,000

Dr Ian Cole - Principal Investigator

"Molecular markers and mechanism of response to radiotherapy and EGFR directed therapies (IRESSA) in head and neck squamous cell carcinoma (HNSCC)" (Molecular effects of a new chemotherapy medication on head and neck cancer)

The project aims to investigate the response of Head and Neck cancer cells to a new kind of biological therapy (IRESSA) which specifically targets a growth factor receptor.

Current treatment involving surgery and radiotherapy can often have morbid consequences and significantly impair quality of life.

We will look on a molecular level at how this new drug affects a well recognised growth pathway that is often deranged in Head and Neck Cancer. In particular we will look at the E2F1 protein which is important in mediating the growth effects of this pathway.

We will also look at the effects this drug causes on the response of these cancer cells to radiotherapy. Data from these in vitro experiments are expected to identify molecular markers of therapeutic responsiveness to radiotherapy and IRESSA that we can then test in our clinical samples of tongue cancer with known responsiveness to radiotherapy.

As a consequence, we hope to impact on survival by better-directed therapeutic strategies i.e. delivering therapies to those patients with the highest probability of response.

Research undertaken at Garvin Institute of Medical Research

Froulop Vascular Research Grant - \$20,000

Dr David Robinson - Principal Investigator

"Correlation of carotid plaque histopathology with multidetector CT angiography" (Analysis of atherosclerosis of the carotid arteries with CT scan)

Hardening of the neck (carotid) arteries (atherosclerotic plaque) may lead to stroke. However, not all patients with this condition will have a stroke. Some characteristics of the plaque which may be seen on CT scan of the neck may help us to predict which patients are at higher risk of stroke and are therefore more likely to benefit from an operation (carotid endarterectomy) to remove the plaque.

Research undertaken at St Vincent's Hospital and St Vincent's Private Hospital

Annual Grant 1 - \$20,000

Dr Bryce Vissel - Principal Investigator

"Viral mediated gene delivery in the nervous system: Establishing an approach with utility for studying pathology and potential treatment of central nervous system diseases" (Gene therapy approaches for treating neurological diseases)

We have developed a viral mediated gene delivery technology, called recombinant adeno-associated virus, in the USA and we now need to establish the technology here on the St Vincent's campus. We believe that it is likely to have a wide utility for studying neurological diseases and for identifying potential therapies of these diseases. In this proposal we will demonstrate proof of its utility for treating a mouse model of Parkinson's disease.

Research undertaken at Garvin Institute of Medical Research Neurobiology Unit

Annual Grant 2 - \$20,000

Dr Joanne Joseph - Principal Investigator

"Investigating the mechanism of platelet glycoprotein IIb/IIIa activation and microparticle formation in patients with platelet bleeding disorders" (An assessment of platelet activation in patients with platelet bleeding disorders)

Platelets are cells that circulate in the blood and contribute to the maintenance of blood flow. Patients with the clinical disorders myelodysplasia or essentially thrombocythaemia experience bleeding complications that occur due to a defect in the ability of the platelets to aggregate when activated. In this study, we suggest that this defect is due to a defect in the platelet signalling mechanisms, which inhibits the activation of membrane receptors responsible for platelet activation.

Research undertaken at St Vincent's Hospital Haematology Research Laboratory Unit

Annual Grant 3 - \$20,000

A/Prof Diane Fatkin - Principal Investigator

**“Genetic studies in families with atrial fibrillation”
(Finding genes that cause heart rhythm changes in families)**

Atrial fibrillation (AF) is the most common heart rhythm disorder and a major risk factor for heart failure, stroke and death in our community. Recent studies in families have suggested that AF can result from inherited gene defects. What these genes are and the mechanisms by which gene defects cause AF is not well understood. We hope to identify disease-causing genes in families and ultimately, to use this knowledge to find new approaches to diagnose and management of AF.

Research undertaken at Victor Chang Cardiac Research Institute

Annual Grant 4 - \$20,000

A/Prof Anne Keogh - Principal Investigator

“Treatment of symptomatic advanced left ventricular failure with sildenafil - a single centre, investigator driven proof-of-concept, pilot study” (Treatment of symptomatic advanced heart failure with sildenafil)

Sildenafil blocks the break-down of nitric oxide in blood vessels resulting in vessel dilatation. It is effective in reducing pulmonary hypertension, left heart pressures and increasing cardiac output. Its use may allow medical stabilisation of advanced heart failure patients. This is an investigator driven, proof of concept, in-house, placebo controlled, randomised study of 30 subjects with advanced heart failure, examining the effect of sildenafil on their symptoms, hemodynamic parameters and quality of life.

Research undertaken at St Vincent's Hospital

Annual Grant 5 - \$25,000

Dr Douglas Fenton-Lee - Principal Investigator

“The St Vincent's Minimally Invasive Surgical (MIS) Training Centre”

Training and accreditation in basic and advanced minimally invasive surgery provides improved patient care, wider patient options and increased safety and efficiency in the operating theatre. Training and accreditation in MIS techniques are not currently standardised or compulsory, although individual centres internationally and several surgical colleges are working to define this area for their fellows.

The St Vincent's Institute for Minimally Invasive Surgical Training was established with this goal in mind. Developing its core training curriculums and acquiring current training tool technologies are the two aspects that require continuous staffing and funding. This grant application is for further development of the institute's goal.

Research undertaken at St Vincent's Clinic

Annual Grant 6 - \$25,000

Dr Simon Tan - Principal Investigator

**“Computerised Arthroscopy simulator for knee and shoulder arthroscopy”
(Minimally invasive surgical trainer for knee and shoulder arthroscopies)**

The request for the grant is to purchase the necessary hardware and software so that in addition to the ability to provide laparoscopic training capability for junior and senior surgeons in the unit on Level 4 at the Clinic, the Clinic will be able to provide the same capability for knee and shoulder arthroscopies.

For over 20 years knee and shoulder surgery has been revolutionised with the development of the arthroscope and the development of more complex instruments to do intra articular surgery. Most ligament reconstructions are now performed this way. The advantages to the patient have been enormous with less post operative pain, less time in hospital, smaller incisions with both better cosmesis and also less risk of infection. However these procedures are more difficult than traditional procedures and require special training. Traditionally this has been done on animal joints which are barely adequate for the task. An apprenticeship arrangement has also been used in the operating theatre but this requires practice on patients. In the past this has been the only available option. However with the improvements in computer technology, software development and hardware speed it is now possible to do this in a simulator. This is similar to other simulators such as in the airline industry. The equipment is self learning with the operator getting direct feedback and scoring. This enables a high level of skill and manual dexterity before a trainee operates on a patient. Whereas the simulator will never completely mirror the 'feel' of normal surgery the basic skills will be at a much higher level.

Research undertaken at St Vincent's Clinic

Travelling Fellowship 1 - \$10,000

Dr Davendra Segara

To undertake further clinical experience and training in breast cancer diagnosis and surgery at the Brigham Women's Hospital in Boston, Massachusetts, USA.

Travelling Fellowship 2 - \$10,000

Dr Steve Austin

To study the mechanisms of thrombosis, reactivity of the autoantibodies and contributory factors of these conditions at University College London Hospital.
