

Researchers without borders.



St Vincent's Institute Annual Report 2008

A world of persistence & creativity. In a secondary school nestled in the foothills of Argentina's Sierras Chicas, a young Gabriella Crespi is inspired by a teacher with a passion for neuron biology.

In a snow-bound Dundee laboratory, undergraduate John Scott finds himself captivated by the tiny chemical changes that cause cancer and cystic fibrosis.

In a sprawling Bangalore hospital, a brush with diabetic children draws Balasubramanian Krishnamurthy away from the registrar's office and into the lab.

In a San Francisco 'wound healing' clinic, Nancy Hancock is moved to abandon plans for medical school and pursue a Master's in Structural Biology instead.

In a Tel Aviv primary class, ten-year old Ora Bernard stares enthralled at the internal workings of a dissected frog, and a lifetime love of biology begins.

From the moment Pehr Edman sent a telegram in 1957, accepting the post as St Vincent's Institute's first Director, SVI's ambition and achievement has drawn incisive and driven research minds from all over the world.

Our labs are currently enriched by natives of Sao Paulo, Boston, Montevideo, Skopje, Hanover, San Diego, Jakarta, Ouito, Singapore, Jiangsu, Cologne, Mumbai, Stockholm and many other cities.

The perspectives and influences they bring enriches the work undertaken by colleagues with more familiar origins such as Horsham, Carlton and Yallourn.

Together, these talented individuals will help take SVI's work to the next level.

Moreover, the work of our incredible researchers goes back into the repository of global knowledge, helping other teams in other institutes make breakthroughs in their own programmes and projects.

In this report, you'll read about the year's research highlights, the contributions our staff have made to the scientific community and the fellowships, prizes and grants that have been awarded.

In a way that Pehr Edman might never have imagined on his long voyage from Europe, St Vincent's has become a truly global hub for original medical research, both drawing from, and giving to, the world around us.



THIS IS SVI

SVI is an independent institute conducting medical research into the cause, prevention and treatment of diseases that are common and have serious effects on health. We strive, through our research, to help alleviate the enormous financial, emotional and physical impacts of these diseases on individuals, their families and the community.

OUR VALUES

We value excellence, integrity, creativity, collaboration, individual drive, persistence, and the challenging of dogma.

4	About	; SVI,	Our	Mission	&	Value

6 Introduction

Research Groups

- **14** Drug discovery
- **16** Obesity and type 2 diabetes
- **18** Heart disease
- 20 Type 1 diabetes

- **22** Autoimmune diseases
- 24 Arthritis, osteoporosis and cancer
- 26 Cancer
- **40** Infectious diseases

Institute Activities

- **42** SVI Director and Chair report
- **44** Institute highlights
- **45** Students at SVI
- **48** SVI Board of Directors
- **50** SVI Foundation Chair report

OUR MISSION

To carry out high-quality biomedical research in order to make discoveries that will improve the health of the community by prevention or better treatment of common diseases that cause premature death or reduced quality of life.

DISEASES STUDIED

Type 1 diabetes, obesity and type 2 diabetes, heart disease, bone diseases such as arthritis and osteoporosis, cancer, infectious diseases, Alzheimer's disease and other neurological disorders

- **51** SVI Foundation highlights
- 54 SVI Foundation Board members
- **56** Fellowships, prizes and grants
- 57 Service to the scientific community
- **59** Collaborations

- 61 Presentation
- 63 Publications
- 65 <u>Seminars</u>

Structure and Management

- 66 Organisational Chart
- **67** Staff and students
- 69 SVI committees

Financial Report

- 70 Financial snapshot
- 88 Donors and bequests
- **91** Event supporters
- 91 How you can help SVI



Pehr Edman travels from Lund, Sweden to Melbourne to be SVI's first Director.









Glasgow to Dundee to SVI

John Scott, Postdoc, Protein Chemistry

New Zealand to Hong Kong to New Zealand to SVI

Matthew Chung, Postdoc, Structural Biology

Argentina to USA to SVI

Gabriella Crespi, Postdoc, Structural Biology



Balasubramanian Krishnamurthy, Postdoc, Immummunology and Diabetes



"I grew up in Glasgow, but did my PhD at the University of Dundee in Scotland. It was a small university, but the research institute based there is huge. About 800 staff all up.

As a student, I remember being gobsmacked that little changes in the chemistry of life can cause horrible diseases such as cystic fibrosis and cancer. I really wanted to find out more about this biochemical fabric of life, and that's how I found my way into research.

It was working into the long summer evenings that I first heard about Bruce Kemp's lab at SVI. Really, they were competitors with our lab in Dundee. But I liked the work he was doing, so I applied for a position and here I am. I thought it would be a great opportunity to live and work in Australia with some high profile people, and to continue working on AMPK, and I haven't been disappointed."



"I was born in Auckland, then moved to Hong Kong when I was one. I remember Hong Kong as being jammed with people, from mini-skirted, mid-life crisis 'aunties' to crusty old men in their white singlets. When I returned to Auckland to go to university, the sense of space was almost overwhelming.

I became interested in research through a bit of luck. I didn't know what to do at university so I signed up for biomedical science, optoelectronics and commerce. I got into biomed and quite enjoyed the molecular biology aspect, which led me into postgraduate studies.

I was fortunate enough to fall under the supervision of Prof. John Fraser and Prof. Ted Baker. Ted's lab is part of the mycobacterium tuberculosis structural genomics consortium, so there was a lot of focus on TB proteins. It was John that first made contact with Michael Parker at SVI as I was finishing up my PhD.

What inspired me to do research? I guess I am attracted to the diverse range of research that is available. It keeps me motivated and interested. Getting to play with large expensive equipment is a bonus!"



"When I was in the beginning of my secondary school in Cordoba, Argentina, I was lucky to have a really good teacher who was also doing interesting research related to neurobiology. Though we were young, she taught us a few techniques related to this. She was very inspiring and started me along the research path.

I got my degree at the National University of Cordoba, which is the oldest University in Argentina and the second oldest in all the Americas. Cordoba was one of the first Spanish capitals, so all the streets and plazas are lined with graceful colonial architecture. It gets really hot in the summer, and my family would always escape up into Las Sierras (the hills) to get away from it.

After graduating, I worked in Virology in Cordoba, before moving to Emory University in Atlanta where I did research on Parkinson's disease. Then I read about a position in Michael Parker's laboratory. What I liked was that there was not only support from an impressive team but also had an interesting research topic that I liked. I've been here three years now, and I'm very excited by the work we're doing!'



"When I graduated from Bangalore Medical College, I had intended to embark on a career as a registrar, to provide security for my wife and our three children. But attached to the College were a number of teaching hospitals. It was in one of these hospitals that I got exposed to a clinical research project.

I was involved in an epidemiological study, assessing the risk of diabetes in the offspring of parents who both had Type 2 diabetes.

Later, as a registrar undergoing clinical training in endocrinology, I was exposed to research projects that involved basic laboratory research. We studied clinical, immunological and genetic profiles of diabetes in children. This stimulated my interest in research.

My goal is to be a clinicianresearcher. To achieve this I realised I needed more research exposure. So I contacted Professor Peter Colman. When I asked him if he had a position in his lab, he replied "I'm afraid I'm not really in a position to take you. You should ask Tom Kay."

"I feel very fortunate today that Peter didn't have a position for me!"



Tel Aviv to Paris to Montreal to Melbourne to Basel to Melbourne to SVI

Ora Bernard, Unit head, Cytoskeleton and Cancer

Germany to Stockholm to SVI

Susanne Feil, Postdoc, Structural Biology



California to SVI Nancy Hancock, Postdoc, Structural

Biology

"I grew up in Salinas, California. One of its few claims to fame is that John Steinbeck was born there.

Biology was always my favourite subject at school, though having parents who were in the medical fields might have helped. After finishing my undergraduate degree I had planned on applying to medical school but that changed after I did an internship in a 'wound healing' lab at the University of California, San Francisco. It was a summer position in the laboratory of Professor Thomas Hunt who was working on the identification and purification of angiogenesis factors.

I really loved the work and then completed a Master's Degree on the identification and cloning of a gene in yeast that confers resistance to the antibiotic tetracycline. After graduating, I worked primarily in biotech and pharmaceutical companies, before I was offered a position in Michael Parker's Structural Biology laboratory six years ago."



Louise Purton, Head, Stem Cell Regulation



"I loved growing up in Tel Aviv. My primary school was two minutes walk from the beach, and we could see the blue water from our second floor classroom. As soon as the lessons finished, we were off to the beach.

After I finished my Master's at Tel-Aviv University, I went to Paris to work in the lab of Jean Dausset in Hospital St Louis. We worked on human transplantation antigens for which Dausset received the Nobel Prize.

I got married to Claude who did his National Service in Montreal. So Montreal was where I started my PhD, at McGill University Dept of Biochemistry. I spent three and a half years at the Walter & Eliza Hall Institute, before taking a position at the Basel Institute of Immunology. I worked there with Susumu Tonegawa on Immunoglobulin rearrangement for which Susumu got his Nobel Prize. After 2 years in Basel I returned to WEHI where I stayed for 26 years before moving to SVI."

I always knew I'd do research. I like the challenges and the excitement of discovering new things and the possibility to help mankind. The day I sequenced the rearranged immunoglobulin gene that led to Susumu's Nobel Prize was amazing."



"The school I went to in Bruchsal, Germany was a "Wirtschaftsgymnasium". "Wirtschaft" means "economy" and the word "gymnasium" is the word for a prestigious secondary school. We were taught a lot of subjects that covered all aspects of economics. I really didn't like it.

I actually had to move to Stockholm and go back to school and study biology before I could study it at university. Sweden in the eighties had a solid social welfare system. Students were given a lot of respect and lecturers were very supportive and fair. I will always remember what my first lecturer said: "You are here - so you must be good!"

My most inspiring lecturer was Margareta Ohne. She still teaches microbiology, toxicology and genetics. Margareta was the one who helped me decide to focus on molecular biology and microbiology.

Part of my University degree was to get some work experience in a laboratory. Bruce Kemp accepted me as a student and offered me a position as a research assistant after I finished my degree.

Now, my research at SVI allows me to do far more sophisticated things than I ever thought I would be capable of."



"I grew up in Balranald, on the banks of the Murrumbidgee in New South Wales. It's only a little place, just 1500 people and nobody had ever been awarded a PhD before me.

My interest in blood cells began at University. After graduating I was fortunate enough to spend some time at the Peter MacCallum Institute and then Harvard. When my partner Carl Walkley and I wanted to return to Australia, I was impressed with the Bone group here. We had collaborated with them in the past, and Carl and I both independently thought SVI would be a great place to come back to when we were finished in Boston.

What is it about research that drives me? It's the never-ending challenge that I enjoy. Also, it's nice to know that we might be able to make a difference in understanding how diseases occur and find better therapies for them."







Structural Biology

Proteins are one of the body's essential building blocks. In addition to contributing to the structure of the body, proteins also act as molecular engines, controlling all of the body's functions. Determining the structure of a protein can help us to understand its function. Crystallography allows us to 'see' the 3-D structure of proteins at the atomic level. The protein's 3-D structure can then be used to help design new drugs for the treatment of disease. The major areas of protein crystallography research in the Structural Biology Unit involve proteins implicated in cancer, brain disease, bacterial and viral infection.

Improving memory

over the age of 65 are estimated to suffer some form of cognitive impairment, underscoring the need for effective cognitive-enhancing agents. Insulin-regulated aminopeptidase (IRAP) is potentially an innovative target for the development of cognitive enhancers, as its peptide inhibitors exhibit memory-enhancing effects in both normal and memory-impaired rats. Using a homology model of the catalytic domain of IRAP and virtual screening, we identified a class of nonpeptide, small molecule inhibitors of IRAP. Subsequent medicinal chemistry performed on the highest affinity compound produced inhibitors with nanomolar affinities (Ki 20-700 nM) for IRAP. In vivo efficacy of one of these inhibitors was demonstrated in rats, improving performance in both spatial working and recognition memory paradigms. We have identified a family of specific IRAP inhibitors that is biologically active: these will be useful both in understanding the physiological role of IRAP and potentially in the development of clinically useful cognitive enhancers. Our work on IRAP is in collaboration with Dr Siew Yeen Chai of the Howard Florey

New treatment for emphysema?

The aggregation of antitrypsin into polymers is one of the causes of neonatal hepatitis, cirrhosis and emphysema. A similar reaction resulting in disease can occur in other human serpins, a group of diseases collectively known as the serpinopathies. One possible therapeutic strategy involves inhibiting the conformational changes involved in antitrypsin aggregation. The citrate ion has previously been shown to prevent antitrypsin aggregation and maintain the protein in an active conformation; its mechanism of action, however, is unknown. We have solved the crystal structure of citrate bound to antitrypsin and show that a single citrate molecule binds in a pocket between the A and B β -sheets, a region known to be important in maintaining antitrypsin stability. Monash University.



Michael Parker David Ascher Brett Bennetts Matthew Chung Gabriela Crespi Susanne Feil Michael Gorman Nancy Hancock Louis Italiano Jack King-Scott Sara Lawrence Luke Miles Craig Morton Hooi-Ling Ng Lorien Parker Galina Polekhina Kher Shing Tan Julian Tang Peter Walsh Jerome Wielens Di Wu

Photo l to r Michael Parker Michael Gorman Louis Italiano

Structure revealed

After years of painstaking research, in 2008 Professor Michael Parker and his lab, along with collaborators at the Centre for Cancer Biology in Adelaide, revealed the three-dimensional structure of an important molecule, called GM-CSF, bound to its receptor. GM-CSF signalling is responsible, in part, for diseases such as arthritis, rheumatoid arthritis and certain types of leukaemia. The researchers now plan to use their knowledge of the structure to design compounds to stop the signal from being transmitted







• Protein Chemistry ... and Metabolism

The major focus of the Unit is an enzyme known as AMP-activated protein kinase (AMPK). AMPK is one of the body's major energy regulators. A requirement for life is that energy metabolism is tightly coupled to demand. AMPK does this at the single cell level by boosting energy metabolism when energy levels are low. At the whole body level, AMPK controls appetite in response to hormonal signals acting on the brain, which switch AMPK on or off to stimulate or suppress appetite, respectively. A major motivation for studying this enzyme is that it is at the heart of the health benefits of diet and exercise.

Activating AMPK

AMPK has attracted global attention because of its potential role in metabolic diseases. Weight loss and insulin-sensitising hormones stimulate AMPK activity in skeletal muscle to burn off fat. AMPK is also activated by some common glucose lowering drugs used for patients with type 2 diabetes, such as metformin. As such, AMPK regulates the burning and storage of fats and sugars, and affects the level of sugars, fats and cholesterol in the blood stream, with the potential to offset the effects of obesity, heart disease, diabetes and other age onset diseases. AMPK can also suppress the growth of cancers. Abbott Laboratories produced a small molecule activator of AMPK, called A769662, that had an unknown mechanism of action. We have found that the A769662 drug acts one of the three AMPK subunits, the β subunit, and is specific for the AMPK β 1 isoform. This means that the drug will only affect tissues that contain the $\beta 1$ isoform, such as the liver, but not skeletal muscle, which has the β 2 isoform. Our work has highlighted the potential for a new generation of AMPK activating drugs that can target particular tissues.

AMPK fat metabolism and exercise

Exercise training prevents the development of type 2 diabetes. One of the ways it may do this is by increasing fat burning in muscle. Ten years ago we discovered that exercise increases the activity of AMPK, an effect which was associated with phosphorylation and inhibition of the metabolic enzyme ACC. ACC is a critical enzyme that controls fat metabolism. We tested whether AMPK phosphorylation of ACC occurred in mice with reduced muscle AMPK and found, surprisingly, that these mice burned equal amounts of fat. This suggests that there are backup systems in muscle to compensate for a lack of AMPK, which help to control fat metabolism during exercise. The identification of these alternative systems may represent a new way to increase fat burning with



Bruce Kemp Sebastian Beck-Jorgensen ZhiPing Chen Sandra Galic Kimberley Hewitt Jane Honeyman Frosa Katsis Rebecca Keall Lotte Leick Belinda Michell Jonathon Oakhill Hayley O'Neill John Scott Rohan Steel Gregory Steinberg Shanna Tam Sarah Turpin Bryce van Denderen Sheena Wee

Photo l to r Bruce Kemp John Scott Rohan Steel Gregory Steinberg

The Magic Pill

Researchers in the Protein Chemistry and Metabolism Unit are focussed on harnessing the potential of an enzyme called AMP kinase (AMPK), with the aim of reversing problems associated with obesity and type 2 diabetes. In 2008, Dr John Scott and his colleagues showed that an AMPK-activating drug works by specifically acting on a version of AMPK found mainly in the liver. This finding is important because drugs that can act on AMPK in specific locations are likely to be of great benefit for obese and type 2 diabetic patients.





Molecular Cardiology

Heart failure is a condition where the heart is unable to pump sufficient blood for the body to perform normal daily activities. Approximately 20% of people will develop heart failure during their lifetime. It is a major burden on the community because of the poor quality of life and premature death of affected individuals, as well as the costs of care. We are studying why heart failure occurs, evaluating new therapies and developing strategies to better prevent heart failure.

Identifying those at risk

As part of our development of new strategies to better prevent heart failure, we are collaborating with cardiologists at St Vincent's Health, and Melbourne and Monash Universities to investigate whether measurement of a protein in blood called NT-proBNP can help us to identify people at increased risk of heart failure. Therapies that effectively prevent heart failure are available, but we lack a simple way to identify people at increased risk of heart failure who could benefit from these therapies. We are recruiting 3500 people from the community to study whether people with increased blood levels of NTproBNP have abnormal heart function that may place them at increased risk of heart failure in the future. Identifying people before, or at the earliest stages of heart failure, will enable us to ensure they receive appropriate preventive

The heart bank

To study the mechanisms of heart failure, we are collaborating with cardiologists and surgeons at St Vincent's Health to establish a cardiac tissue bank. With patient consent, small pieces of heart muscle are taken during open heart surgery. Together with colleagues from Melbourne and Monash Universities, we are comparing heart muscle from patients with and without heart failure to identify why the muscle is unable to work properly in heart failure.



Duncan Campbell David Prior Theodora Alexiou Laura Stamp

Photo l to r Duncan Campbell David Prior

Heart to Heart

As part of his research into why heart disease occurs, Associate Professor Duncan Campbell works closely with cardiologist Dr David Prior from St Vincent's Hospital. The two coordinate taking biopsies from patients undergoing open heart surgery. They then compare the heart tissue from patients who have experienced heart failure to healthy heart tissue, looking for differences between the two. These studies will help them to understand why hearts fail, with the aim of developing new treatments for people with heart failure.





Immunology and Diabetes

People with type 1 diabetes lack insulin, the hormone that regulates the body's use of glucose. Insulin is produced by beta cells in the pancreas, which are contained within small clumps of cells called islets. In type 1 diabetes, beta cells are mistakenly attacked and destroyed by the immune system. We study the precise mechanisms by which this occurs, and work to find ways of preventing this from happening. We have begun translating our mouse work to a more clinical level by using human islets for laboratory studies and establishing a human islet transplant program.

The role of cytokines in type 1 diabetes CD4+ T cells can kill pancreatic beta

produced by CD4+ T cells have the potential to kill beta cells, or to upregulate the cell death receptor Fas on beta cells and increase their susceptibility to killing by Fas ligand. We investigated the direct effects of cytokines on beta cells in mouse models of type 1 diabetes that are dependent on CD4+ T cells. Inhibiting the effects of cytokines by overexpression of suppressor of cytokine signalling 1 (SOCS1) in beta cells did not reduce diabetes or the presence of immune cell infiltration in pancreatic islets. SOCS1 overexpression prevented Fas upregulation on NOD4.1 beta cells because this requires cytokines. However, SOCS1 transgenic islets were destroyed when grafted into NOD4.1 mice, as were islets deficient in Fas, suggesting that CD4+ T cells do not use Fas to kill islets. Our previous data indicates SOCS1 protects beta cells from CD8+ T cell killing. In contrast, our data show that beta cells under attack by CD4+ T cells display signs these effects are not essential for diabetes progression.

The Tom Mandel Islet Fransplant Program

The Tom Mandel Islet Transplant Program is a highly collaborative national program funded by the Australian Government and administered by the Juvenile Diabetes Research Foundation. We have carried out four transplants into three recipients since our first successful transplant in 2007. Our first recipient no longer needs to take any insulin following a second infusion of islet cells. One other recipient is also insulin is waiting for her second infusion. The recipients are being studied in detail, including looking at insulin production by the transplanted cells and also evidence of recurrent diabetes and transplant rejection. We are now able to supply many collaborators around We continue to work closely with our colleagues in Sydney and Adelaide and hope to perform an islet transplant in Adelaide, using cells shipped from Sydney or Melbourne. The Program aims to expand its activities in 2009 by beginning transplants of islet cells at the same time that kidney transplants are done for patients with type 1 diabetes.



Thomas Kav Janette Allison Eveline Angstetra Michelle Ashton Rochelle Ayala-Perez Peter Campbell Jonathan Chee Caroline Dobrzelak Sarah Emmett Stacey Fynch Kate Graham Junguan Huang Gaurang Jhala Michael Jovanovic Cameron Kos Balasubramanian Krishnamurthy Catherine Li Thomas Loudovaris Lina Mariana Mark McKenzie Zia Mollah Hayley Moon Nirupa Sachithanandan Natalie Sanders Helen Thomas Anne Thorburn Emma Thorburn

Photo l to r Thomas Kay Helen Thomas Mark McKenzie Lina Mariana

Sweet Death

After working for the last three years on how the insulin -producing beta cells in the pancreas die, PhD student Mark McKenzie had a breakthrough. The beta cells in patients with diabetes are bathed in high glucose, which can damage, and even kill the cells. Mark, along with his co-workers in the Immunology and Diabetes Unit, found that removing two molecules from the beta cells could protect them from glucoseinduced death. This is particularly exciting because drugs designed to inhibit these molecules may be valuable in the prevention of diabetes.



Human pancreatic islets in culture



Signal Transduction

Our immune system protects us against infection by pathogens such as bacteria and viruses. Both the development and the function of the immune system are tightly controlled processes. These controls make the immune system sufficiently robust to fight infection, but not so powerful that the immune cells attack healthy tissue. When this balance is altered, chronic inflammation and autoimmune disease may result. In the Signal Transduction Unit, we are interested in understanding how these control mechanisms work. Using a variety of approaches, we aim to identify molecules that are critical for maintaining a balanced immune system, and which may be suitable candidates for the development of drugs to combat autoimmune disease.

Regulation of cytokine signalling by SOCS1

Cytokines are important messengers that control the survival, growth, the immune system. SOCS (suppressor of cytokine signalling) proteins function as "stop signals" to ensure that cytokine signals are turned off when no longer needed. Our work aims to define the molecular mechanism by which one member of this family, SOCS1, switches off signals in response to the cytokine interferon γ (IFNγ). According to current dogma, SOCS1 inhibits cytokine signalling by direct interaction with Jak kinases and inactivation of Jak activity. Recent data from in vitro studies have challenged this belief, and suggest that SOCS1 binds directly to Y441 of the IFN γ receptor (IFNGR1), and then inhibits Jak activity. To test this theory, we have generated mice in which this putative SOCS1 binding site on IFNGR1 is ablated. Our preliminary data indicate that responses to $IFN\gamma$ are amplified in these mice, suggesting that this residue mediates negative regulation of IFN γ signalling. We are interacts with this site in wild type, but not mutant, cells.

Characterisation of mice expressing a kinase-dead allele of Lyn Lyn kinase, a member of the Src family of tyrosine kinases, functions as both a positive and negative regulator of B cell activation. In the absence of Lyn, B cell receptor (BCR) signalling is unregulated, leading to perturbed B cell development, hyperactive B cells and lethal antibody-mediated autoimmune disease. We have generated a mutant mouse pedigree, *Mld4*, harbouring a novel mutation in the gene encoding Lyn, which renders the protein devoid of kinase activity. Despite similarities between the phenotypes of Lyn^{Mid4/Mid4} and Lyn^{-/-} mice, the spectrum of defects in Lyn^{Mid4/Mid4} mice is less severe. In particular, although defects in the B cell compartment are similar, autoimmune disease is absent or suggest that BCR hyper-sensitivity is insufficient for the development and implicate other cell lineages, particularly pro-inflammatory cells, in autoimmune disease progression.



Robyn Starr Hayley Croom Paul Egan Martina Fuchsberger Ankita Goradia Anne Verhagen

Photo l to r Robyn Starr Ankita Goradia

Mapping Molecules

Associate Professor Robyn Starr and her group study the signalling molecules involved in autoimmune disease. Their painstaking research has helped to map out which parts of these molecules are important for signalling and may play a role in the development of autoimmune disease. By dissecting the molecules and figuring out the function of their different regions, the group hopes to be able to modulate their function.





Bone, Joint and Cancer

The Bone, Joint and Cancer Unit researches how the cells of bone communicate with each other to determine how much bone is formed and broken down. This is a process that continues throughout life, and it needs to be very closely regulated in order for normal bone structure to be maintained. If bone breakdown exceeds bone formation, then bone becomes fragile, and osteoporotic fractures can follow. This work on the biology of bone also helps us to learn how certain cancers are particularly prone to grow as secondary deposits in bone, especially breast and prostate cancer and certain cancers of the blood.

Understanding communication

Our major aim is to understand how cells of bone communicate with each other to control bone remodelling, a process by which a small amount of bone is resorbed by osteoclasts and the space refilled by osteoblasts which form the same amount of bone; this equal activity of two different cell types is known as coupling. At any one time remodelling takes place at many sites distributed asynchronously throughout the skeleton. The purpose of remodelling is to remove old bone, repair damaged bone, to respond to pressure changes, and to control the body's calcium metabolism.

We have been particularly interested in the possibility that the bone resorbing cells, the osteoclasts, may produce factors that control bone formation at remodelling sites by stimulating the bone-forming osteoblasts. In pursuing this question, this year we identified two important mechanisms. One was to show that the cytokine, cardiotrophin-1, is produced by osteoclasts and promotes bone formation. It may therefore be an important local factor in the coupling of bone formation to resorption in the remodelling process. The second was the discovery of a new mechanism by which the osteoblasts themselves control their filling of remodelling spaces. They do this through the regulated production of membrane molecules known as ephrins, which act upon their receptors in adjacent osteoblasts to stimulate bone

We also continue with our efforts to define how cells of the immune system influence bone formation and resorption, and showed in new work this year that the cytokine, interleukin-23, favours higher bone mass in growing bones by limiting the formation of the bone resorbing osteoclasts near the growth plate. Finally, in work that we will continue over the next few years, we have found that the osteocytes, cells located deep in bone and communicating with those on the surface, participate in previously unrecognised ways to control bone remodelling.

The communication processes among cells of bone are essential for the maintenance of the normal skeleton. Our research reveals how disordered bone remodelling can result in bone loss and osteoporosis. The research also extends to our commitment to understanding the mechanisms by which the bone microenvironment can favour the growth of some solid and haematological cancers.



Matthew Gillespie Elizabeth Allan Steve Bouralexis Holly Brennan Ally Chau Vanessa Cheung Melissa Ciccomancini Blessing Crimeen-Irwin Jonathan Gooi Pat Ho Vicky Kartsogiannis Jack Martin Narelle McGregor Frances Milat Rachel Mudge Döne Onan-Asik Sueli Pompolo Ingrid Poulton Julie Quach Julian Quinn **Evange Romas** Hasnawati Saleh Natalie Sims Emma Walker

Photo l to r Natalie Sims Narelle McGregor Emma Walker

Bone Remodelling

Professor Jack Martin has worked on understanding the way the cells of bone communicate with each other for as long as his colleague Dr Natalie Sims has been alive. Even after all this time, the experimental work carried out by their research group continues to discover new communication pathways among these cells, many of which have the potential to influence future treatment strategies for osteoporosis, fracture healing and other diseases of bone.



A section of lower mouse leg stained for bone (black) and bone marrow (pink/red).



Stem Cell Regulation

The Stem Cell Regulation Unit investigates how adult stem cells can replicate themselves (a process termed self-renewal) or commit to become a mature cell type (a process called differentiation). When there are defects in self-renewal or differentiation processes, the stem cell (or its progeny) can become cancerous. We are primarily interested in the regulation of blood stem cells and also research cancer of the bone lineage. We also work closely with the Bone, Joint and Cancer Unit to determine how cells of the bone lineage (which are associated with developing blood cells in the bone marrow) influence blood cell formation.

Vitamin A and blood and bone

We are interested in the roles of vitamin A receptors (retinoic acid receptors) in blood and bone cell development. Vitamin A is a hormone that has multiple and essential roles in organ formation. We have previously described that the active form of Vitamin A, all-trans retinoic acid, has contrasting effects in the development of blood cells and, more recently, bone production. We have identified that these contrasting effects are in part due to the distinct effects of different retinoic acid receptors (RARs) on the development of different blood cell types. One RAR, RARgamma, is critical for maintaining a balance between blood stem cell self-renewal and differentiation. We are further investigating how RARs have different effects in blood and bone cell development by use of RAR specific knockout mice and RAR specific ligands.

Osteosarcoma

We have developed and characterised a new model of osteosarcoma, the most common tumour of bone. We are now using this model to further our understanding of the development and spread of this disease. This model is also amenable to use as a pre-clinical model and we are currently exploring several hypotheses directed at modifying the disease.



Louise Purton Carl Walkley Maria Askmyr Miralireza (Farzin) Takyar Kirby White

Photo l to r Louise Purton Kirby White Carl Walkley

Helpful Mice

In a year of many firsts for Drs Louise Purton and Carl Walkley – most significantly, the first year as Heads of their own Unit – the two have made their first steps at SVI towards finding new treatments for blood and bone cancers. Carl spent 2008 developing a new tool to study the most common primary cancer of bone, osteosarcoma. Little progress has been made in the last 20 years towards treatment for this devastating cancer, partly because there were no animals available that developed a disease similar to the human one. Carl now has mice that display many of the features of osteosarcoma, providing him with an extremely powerful tool for his future research.







Haematology and Leukaemia

Leukaemia is a cancer of the blood cells. The different types of blood cells – red blood cells, white blood cells and platelets – are all derived from a primitive cell, called a stem cell. There is a complex series of developmental steps that must occur in order for a stem cell to differentiate into the different blood cells. If this process goes wrong, leukaemia can develop. The Haematology and Leukaemia Unit focuses on understanding how blood cells mature and how leukaemia disrupts normal blood cell maturation. The group studies these processes by creating mouse models of leukaemia which mimic human disease.

Working towards new treatments against leukaemia

T cell leukaemia cells resemble normal developing T cell precursors. Consequently, the study of how T cell precursors develop in the thymus is important to elucidate the molecular mechanisms of leukaemogenesis. We are attempting to identify new T cell oncogenes by utilising a retroviral cDNA library screening method in primary mouse cells. Additionally, we are creating leukaemia/lymphoma mouse models of T cell and other blood cell lineages using retroviral overexpression. We use multiparameter flow cytometry and cell sorting to analyse these models.

Leukaemia-causing genes

The prognosis of both children and adults with T-cell acute lymphoblastic leukaemia (T-ALL) is the worst of all cases of human ALL. Whilst great strides have been made by intensifying chemotherapy regimes, further dosage increases would cause deleterious side effects. Therefore, more specific therapies need to be utilised. In order to develop more targeted therapies for T-ALL, it is paramount to identify the causative mutations that underlie disease development. We have recently identified an Ets transcription factor as a gene responsible for T cell lymphoma in mice. Using a retroviral overexpression strategy we will be able to elucidate how this transcription factor perturbs T cell development and induces lymphoma. This will be accomplished with genomic analysis of normal and leukaemic cells by microarray. Subsequently, we are planning to identify Ets downstream targets that could potentially be used for preliminary drug screens. By utilising shRNAs we will also identify the normal role of this Ets transcription factor in T cell development. Importantly, this will further illuminate the potential therapeutic ability of inhibitors of downstream targets of the Ets transcription factor and whether they will have the capacity to negatively impact T cell development.

The potential significance of this research is that chemotherapy and associated side effects will be considerably reduced if a specific Ets transcription factor inhibitor can be developed. Additionally, specific inhibitors may be more effective in maintaining event-free survival as they would be targeted to the potential leukaemic stem cell.



David Izon Meryn Chalmers Monique Smeets

Photo l to r Meryn Chalmers David Izon

Leukaemia Genes

When Gleevec, a new drug developed by American researchers to treat leukaemia, came on the market, it gave new hope to leukaemia sufferers. Gleevec is effective because it stops a specific leukaemia-causing gene from working. However, Gleevec does not work for T cell leukaemia/lymphoma. In 2008, Dr David Izon's group identified a new leukaemia-causing gene. The researchers are investigating the role of this gene in disease, with the aim of eventually developing new specific drugs to inhibit it.



A FACS profile allows researchers to look at the individual characteristics of fluorescently labelled cells in a sample.



Molecular Genetics

DNA damage is a key determinant of the onset and severity of cancer. At the same time, almost all cancer therapies act by causing DNA damage. Better understanding of DNA damage responses is therefore likely to improve our knowledge of how cancer develops and could reveal new approaches to cancer therapy. Our laboratory is interested in the molecular mechanisms by which cells deal with DNA damage. We study how human as well as yeast cells sense that their DNA is damaged and how specific DNA lesions are repaired, and we have discovered novel proteins with important roles in these processes.

A molecular dimmer switch

The Rad53 kinase (similar to human Chk2) plays a central role in the DNA damage response in yeast cells. Rad53 activation requires its phosphorylation on any of four threonine-glutamine motifs in the N-terminal SQ/TQ-cluster kinases Mec1/Tel1 (ATR/ATM). While SCD1 mono-phosphorylation fully supports Rad53 functions for the survival of DNA damage, it is insufficient for the activation of its downstream effector kinase Dun1. In collaboration with Ming-Daw Tsai's laboratory (Ohio State University and Academia Sinica), we found that Dun1 is only activated when the Rad53 SCD1 is phosphorylated on at least two threonines. Our 3D structural analyses showed that this was due to the fact that the Dun1 FHA domain, to which for signal propagation, contains two separate phospho-threonine-binding sites and therefore has a 100-fold higher affinity for di-phosphorylated relative to mono-phosphorylated SCD1. These analyses provide a comprehensive molecular mechanism by which cells can fine-tune their response to the strength of the DNA damage signal: low-level damage results in Rad53 mono-phosphorylation escalating damage increases the amount of di-phosphorylated Rad53 and signal amplification to involve

ASCIZ in B lymphocytes

Our laboratory recently discovered a new protein, ASCIZ, which seems to specifically act in response to small DNA base lesions. In collaboration with Shunichi Takeda's laboratory (Kyoto) we have now confirmed that in this role ASCIZ also affects the repair of physiological base damage during antibody gene diversification in B cells. Chicken B lymphocytes that lack ASCIZ have almost 10-fold higher templated mutation rates in the re-arranged immunoglobulin variable regions upon enzyme (AID)-induced base damage, whereas cells overexpressing human ASCIZ have 5-fold lower mutation rates. ASCIZ also seems to be required for the efficient conversion of MMS-induced base damage into the cytotoxic repair intermediate, 5'-dexoy-ribosephosphate. Altogether, the results indicate that ASCIZ may be a ratelimiting factor for channelling the repair of small base lesions into the accurate base excision repair pathway.



Jörg Heierhorst Andrew Hammet Nicolas Hoch Alesia Ivashkevich Sabine Jurado Xianning Lai Tricia Lo Nora Tenis Ana Traven

Photo l to r Nicolas Hoch Nora Tenis Jörg Heierhorst

The Dimmer Switch

Associate Professor Jörg Heierhorst and his group have spent years trying to unravel how cells respond to DNA damage. This year, in collaboration with Ming Daw Tsai and colleagues at Academia Sinica and National Taiwan University, the group had a major breakthrough. The researchers described a new mechanism that acts as a 'molecular dimmer switch', allowing cells to fine tune their repair responses, depending on the level of DNA damage that has occurred.



Cell Cycle

In higher eukaryotes, controlled cell proliferation and differentiation is required for normal growth and development. Deregulation of cell growth pathways leading to unrestrained cell division is a primary characteristic of cancerous cells. Therefore, defining the causes of increased cellular division is fundamental to understanding carcinogenesis. Our group is interested in understanding the molecular mechanisms of cell division and how deregulation of these pathways contributes to the development of human cancer. Our research ultimately aims to develop new approaches for cancer therapy.

Identifying new substrates

Cyclin-dependent kinases (CDKs) promote cell cycle progression by phosphorylation of cell cycle regulators. Deregulated CDK activity results in the development of many human cancers due to increased cell division. We have isolated a protein called SAP180 which is phosphorylated by CDKs. SAP180 is related to the tumour suppressor, retinoblastoma binding protein (RBP1). RBP1 recruits histone deacetlyases (HDACs) to pRb to inhibit transcription and cell cycle progression. We have demonstrated that RBP1 and SAP180 bind to mSIN3A and histone deacetylase 1 (HDAC1), which are transcriptional regulators. RBP1 and SAP180 are phosphorylated by cyclin/ CDKs in vitro. Using mass spectrometry we have shown that they are phosphorylated on cyclin/CDK sites in cells. This phosphorylation disrupts their association with pRb. These studies suggest that phosphorylation of RBP1 and SAP180 disrupts their association with pRb to activate transcription and cell cycle progression. In ongoing studies we will determine if CDK-mediated phosphorylation of RBP1 and SAP180 regulates cell cycle progression.

<u>Control of cell cycle</u>

The ubiquitination pathway involves the covalent binding of ubiquitin to proteins, resulting in their proteasomal degradation. This pathway accounts for 80% of cellular protein turnover. The recent approval of the proteasome inhibitor bortezomib for the treatment of multiple myeloma indicates that this pathway offers new avenues for cancer therapy. Ubiquitin-conjugating enzymes (UBCs or E2s) and ubiquitin ligases (E3s) are pivotal in the ubiguitination pathway and are implicated in human cancer development. Our laboratory has unveiled critical regions in E2s and E3s, which regulate the activity of these enzymes and cell cycle progression. In addition, we have shown that these important regions chain is attached to proteins. This is an important issue, since linkage of different ubiquitin chains onto proteins influences their fate. Structure-function studies will characterise the importance of regulatory sites for E2 and E3 function at a molecular level in vitro and determine their importance in cell cycle progression in genetic studies. Ultimately, these regulatory regions may represent new drug target sites that may be used to modulate the activity of different E2s and E3s for cancer treatment.



Boris Sarcevic Victoria Chan Martin Sadowski Randy Suryadinata

Photo l to r Boris Sarcevic Martin Sadowski

Divide and Conquer

Dr Boris Sarcevic wants to understand why cancer cells divide uncontrollably, leading to tumour formation. His group is focused on the role of a family of enzymes, called ubiquitin enzymes, without which cells cannot divide. This year, Boris and his group have shown which parts of the ubiquitin enzymes are responsible for cellular division. The ultimate aim of this work is to develop compounds that can stop cancer cells from forming tumours.



Molecular alterations to the Cdc34 molecule control cell growth.



Cytoskeleton

The cytoskeleton provides a scaffold for a cell's inner workings. The major components of the cytoskeleton are actin filaments and microtubules. Both are involved in cell motility and cell division. Changes in the structure of the actin cytoskeleton are responsible for the ability of cancer cells to migrate within the body. In the Cytoskeleton and Cancer Unit we are studying the role of a family of proteins known as LIM kinase (LIMK) 1 and 2 with the aim of identifying small molecules that can inhibit these enzymes and possibly cancer metastasis.

The role of LIM kinases in cancer metastasis

LIMK1 and LIMK2 are regulators of the actin cytoskeleton. Both enzymes inhibit actin depolymerisation by inhibiting the activity of cofilin, an in accumulation of actin filaments. While the role of LIMK1 in cancer metastasis is well established, that of its family member, LIMK2, is not yet known. Because of its involvement in cancer metastasis, LIMK1 is a good drug molecules that can inhibit its activity. In collaboration with the CRC for cancer therapeutics (CRC-CTx) we have screened a library of compounds and identified several molecules that inhibit LIMK1 activity in vitro and in cells. Some of these compounds can inhibit the proliferation and invasion of MDA-MD-231, an invasive human breast cancer cell line, in a 3D culture that mimics cells grown in the body. Animal studies designed to test the ability of these drugs to inhibit breast cancer metastasis in a mouse model

The role of LIMK2 in adipocytes

Obesity is an important factor in insulin resistance and type 2 diabetes. Adipocytes (fat cells) become dysfunctional with obesity; however, the mechanisms linking obesity to insulin resistance are still poorly lacking the expression of one of the LIMK2 isoforms (LIMK2a). These mice are obese, have enlarged adipocytes and are insulin resistant. Importantly, the insulin resistance is evident in vivo, but not in isolated tissues, indicating that LIMK2a deletion influences systemic metabolism. Furthermore, because enlarged adipocytes are an independent predictor of type 2 diabetes, inflammation and lipotoxicity, understanding how LIMK2 regulates adipocyte function is important in order to better understand obesityinduced insulin resistance. LIMKs are important regulators of the cytoskeleton. It is well established that alterations of the actin cytoskeleton and decreased tubulin and vimentin synthesis are important in the regulation of adipogenesis. We are currently assessing the role of LIMK2a in adipose tissue development, cytoskeleton remodelling and secretory function and are exploring the cellular mechanisms and pathways by which LIMK2a controls obesity through the identification of new LIMK2 substrates in adipose tissue.



Ora Bernard Juliana Antonipollai Sheng Chen Rong Li Kevin Mittlestaedt Alice Schofield Jiong Zhou

Photo l to r Juliana Antonipollai Rong Li Ora Bernard

Multitasking

Associate Professor Ora Bernard has spent years researching a family of proteins called the LIM kinases. She is interested in these proteins because they are involved in cell movement, which is important for the spread of cancer. In 2008, Ora and her colleagues found that one of her favourite proteins has an even more diverse role than originally thought. Ora has shown that mice which do not have the protein are obese and, like type 2 diabetics, insulin resistant. Ora's research into this interesting family of enzymes continues



Mice lacking the LIMK2 protein (right) are obese and insulin resistant.



Cancer

Pharmacogenomics

Pharmacogenomics is the study of how an individual's genetic makeup affects the course of disease and responses to medication. Work at SVI combines traditional sciences, such as biochemistry, with recent advances in our knowledge of genetics and drug discovery. This allows us to identify genes that are involved in disease and help design drugs to stop them from working. We have recently identified genes involved in the spread of cancer and those associated with the onset of diabetic kidney damage.

Inhibiting breast to bone metastasis

Metastasis is the primary cause of mortality associated with cancer, to metastatic spread are poorly understood. Over the past several years our laboratory has studied a number of cell-culture and animal based models of metastasis using a range of genomic profiling technologies in order to identify 'culprit genes' that contribute to metastasis. Using specialized genomic profiling techniques, we have established a 'gene-fingerprint' of metastasis which is being refined for potential application in clinical diagnosis. We have also been using a combined genomic and drug-response profiling technique to identify drugs that block the process of metastasis. Thus far, we have identified two promising drug molecules that are capable of inhibiting breast-to-bone metastasis in our mouse models. We are in the process of further testing these agents using our preclinical models of the disease in order to facilitate clinical trials in breast cancer patients.

New drug targets in diabetic nephropathy

Diabetes often leads to the development of a form of kidney damage known as diabetic nephropathy. Kidney damage in this condition is characterised by an increased accumulation of extracellular matrix (e.g., collagen) brought about by a high glucose environment. We have recently identified a gene that plays a critical role in the generation and subsequent pathological consequences of accumulated extracellular matrix. We are collaborating with the Institute's Structural Biology Unit to elucidate the crystal structure of this protein and design specific inhibitors to block its detrimental biological activity.



Mark Waltham Shie Foong Kok Walter Pfister Annabel Southey Timothy Tan Sarah Vickery

Photo l to r Mark Waltham Shie Foong Kok
Slowing Cancer Growth

Over the past year Dr Mark Waltham and his group have been developing a promising drug that slows the growth of cancer in bone. Patients with specific types of cancer may benefit from treatment with this drug, especially if that cancer is likely to spread to bone. New technologies acquired by SVI are helping the group to test the anticancer agent in mice and in combination with conventional therapies.



Metastatic tumour growth in mouse bone.



Cancer

• VBCRC Invasion and Metastasis

The VBCRC Invasion and Metastasis Unit is part of the Victorian Breast Cancer Research Consortium, a series of Melbourne-based breast cancer-focussed groups. We study the spread of cancer cells to secondary sites (metastasis) and have two major themes: matrix metalloproteinases (MMPs) and Epithelial-Mesenchymal Transition (EMT). MMPs are enzymes that cells use to cut through tissue, and are important in the movement of cells to other sites – we especially study bone metastasis. EMT allows cells to change their physical state from a stationary into a migratory state, helping them spread.

MMP-13 studies

In collaborative studies with the Pharmacogenetics Unit, we have previously examined the effects of commercially developed MMPinhibitors (Marimastat/B2516 and Prinomastat/AG3340) in the MDA-MB-231 human breast cancer xenograft system. These agents significantly inhibited the growth of MDA-MB-231 cells in mice, and delayed the onset and severity of bone metastatic lesions. Our current goal is to define and inhibit individual MMPs responsible for breast cancer growth and spread. We found that MMP13 was abundant in these lesions, and found also significant inhibition with a new MMP13-specific inhibitor from Pfizer Global. MMP13 may prove an important new drug target in both primary breast cancer

Epithelial-mesenchymal transitio

We have characterised a human breast cancer model of epithelialmesenchymal transition (EMT). EMT allows normally stationary cells to migrate, invade tissue structures, and survive outside of the collective. PMC42 cells are a unique human breast undergoes EMT in response to Epidermal Growth Factor (EGF), an important etiologic factor in breast cancer. Gene array studies have identified candidate effector molecules, which we are examining in clinical breast cancer specimens using immunohistochemistry and Multiplex tandem PCR (MT-PCR). MT-PCR allows us to measure RNA levels of various EMT-related genes in a single archival section. These bioinformatic analyses of our own array data and published cell line and provided evidence of EMT-associated gene expression in putative human breast cancer stem cells (BCSC) isolated from clinical specimens. Bioinformatic analysis is also identifying new potential EMT targets for further analysis in the PMC42 system.



Erik Thompson Tony Blick Devika Gunasinghe Dexing Huang Cletus Pinto Manisha Shah Jenny Trinh Razan Wafai Edwin Widodo

Photo l to r Erik Thompson Dexing Huang Devika Gunasinghe

Stopping the Spread

Associate Professor Rik Thompson has spent much of his career looking at the changes that occur as a cancer cell becomes capable of spreading. Researchers in the VBCRC Unit have now found that these changes may help to identify the breast cancer stem cell, which spreads easily and is highly malignant. The group now aims to use the knowledge that it has acquired to stop these cells from causing recurrence of breast cancer.



A human breast cancer cell line with invasive (red), non invasive (green) and mixed characteristics.



National Serology Reference Laboratory

The National Serology Reference Laboratory, Australia (NRL[™]) is committed to helping curb the spread of blood-borne and other infections by assuring the quality and confidence in laboratory results in Australia and internationally. We deliver world's best practice quality assurance of Human Immunodeficiency Virus (HIV) and Hepatitis C Virus (HCV) tests and have defined and corrected large numbers of problems with testing performances and protocols. The NRL also supplies quality assurance programmes internationally to ~120 laboratories. NRL research focuses on improving HIV and HCV diagnostic testing, developing better markers for clinical prognosis and vaccine development.

HIV-1 progression in infected individuals

Observations from clinical studies pathogenic. Understanding the particular virus to which an individual is exposed initially is very important for planning treatment and in development of a protective vaccine. Little is known of HIV-1 viral fitness in early acute infection. Access to a individuals has facilitated the examination of virus fitness during this stage of infection. Using a highly sensitive, quantitative real-time PCR assay, viral DNA production is used to measure virus replication ex vivo as a rapid method to assess viral fitness. Changes in relative viral fitness over the course of the acute infection were observed. Unexpectedly, viral fitness during acute infection was higher than later in the course of infection. These findings suggested that the fitness of virus during acute HIV-1 infection may be relatively higher than previously thought. The implications are important for developing a preventative HIV vaccine to block initial infection.

gnostic tes The prevalence of HCV infection in Australia is ~242,000 people; most of whom (80%) are IV drug users. Currently, assays reliably determine the prevalence of HCV infection but not its incidence. By thoroughly investigating immune responses generated by individuals infected with HCV we intend to identify stages of infection, thus aiming to find a marker of recent HCV infection. Accurate epidemiological monitoring of HCV will permit the design of better programs to control its spread, trace outbreaks and manage treatment programmes. Further, a marker for predicting clinical outcomes of infection is being investigated. This would be invaluable, because of those infected with HCV, 20 to 30% resolve their infection without therapeutic intervention. Such intervention can have numerous adverse side effects and can be expensive. The aim is better interpretation of diagnostic laboratory findings, improved provision of clear and accurate reports to clinicians, patients and blood donors, enhancing the Australian blood service's safety and donor retention.



Elizabeth Dax Alicia Arnott Thein Thein Aye Susan Best Penny Buxton Denison Chang Roderick Chappel Chris Chiu Stirling Dick Wayne Dimech Cathy Dunkley Rosanna Fahmy Barbara Francis Helen Hasler Marina Karakaltsas Sally Land Mark Lanigan Tamara McDonald Dale McPhee Louie Opasinov Lena Panagiotopoulos Alison Parker Thu-Anh Pham Scott Read Kim Richards Derya Sahin Kathy Smeh John Tomasov Frank Torzillo Linda Tracey Madhu Viapayee Robert Vinoya Trinh Vo Sandy Walker Kim Wilson

The Fitter the Better

The 'fitter' a virus, the more successfully it will grow in its host. Little is known about the effects of HIV/AIDS viral fitness in early infection. Dale McPhee and his colleagues in the NRL were surprised to find a high level of fitness of HIV virus upon first infection. This research will help in the effort to develop a more effective vaccine to protect against HIV.



Photo l to r Alicia Arnott Dale McPhee Penny Buxton



SVI Director and Chair report

An exciting part of 2008 was the planning of the Aikenhead Centre for Medical Discovery, which will further strengthen SVI's future. Great progress was made in plans for the governance structure of the Centre and the relationships between the parties. At the time of writing we are at an early stage of seeking funding to build this new research facility on the corner of Victoria Parade and Nicholson Street. Very recently we have had word of funding by the Victorian State Government for the development of more detailed plans. There is no doubt that the tragic Victorian bushfires in February and the current economic crisis will pose challenges, but also opportunities, for major infrastructure projects such as this.

Researchers on the campus will be co-located with some neighbouring institutions; the aim being close collaboration between basic science and clinical medicine. The main participating institutions will be SVI, the Bernard O'Brien Institute for Microsurgery, the Bionic Ear Institute, St Vincent's Health and the University of Melbourne. The University of Wollongong and Step Ahead Australia will also have a presence in the Centre. The goals are to have impact on health through collaboration, sharing of resources and links with the clinic. The ultimate goal is an integrated research centre and hospital campus. The Centre will provide many opportunities for both clinicians interested in in greater involvement in clinical

The themes that will differentiate this initiative from others will be medical bioengineering and research responding to National Health Priorities, especially diseases of metabolism such as heart disease and diabetes. The theme of medical bioengineering will encompass protein crystallography, neurosciences, including the bionic eye and new epilepsy treatments, tissue engineering, genetic engineering of organs for transplantation in humans and joint replacement. There will be a very strong focus on research training for scientists and doctors of the future.

will retain their autonomy and independence – there is no intention for them to fully merge. We will retain the identity of SVI as a strong and excellent laboratory research centre but with greatly enhanced links with neighbouring institutions and significantly increased opportunities for collaboration, especially with our clinical colleagues. We will have very open access to visit and interact with others and we will share many support services and facilities. There will be an overarching independent Board for the whole centre, plus an Executive five major founding partners.

One of the greatest of many opportunities in this initiative is to work more closely than ever before with the University of Melbourne. Medical research institutes (MRIs) are an integral part of the biomedical research effort of the University and closer ties between Institutes and the University are mutually highly desirable and beneficial. The University and its affiliated MRIs are recognised as one of the top few bioscience precincts in the world and the two together are much stronger than either alone. MRIs are one of the engine rooms of Australia's medical research effort and have been very successful, especially on hospital campuses.

It has become very important for achievement to be counted using various metrics, even if these can have flaws. Universities are ranked by scales such as those used by the Times Higher Education Supplement and the Shanghai Jiao Tong University. The University has aspirations to be ranked among the very best in the world, especially in biomedicine. Institutes like SVI can help accomplish this. Research at MRIs should ideally be viewed as an extension of the research mission of universities and hospitals.

We aim to overcome any barriers to working closely together and have made great progress in building our relationship with the University over the past year. Continuing this and moving forward on the Aikenhead Centre are top priorities for the year to come.

2008 has been another outstanding year of achievement by our scientists and many of these highlights are detailed within this report. We would like to thank you for your support this year and we particularly want to acknowledge and thank the SVI Board and the SVI Foundation Board for all their hard work in 2008. "An exciting part of 2008 was the planning of the Aikenhead Centre for Medical Discovery, which will further strengthen SVI's future."

Burda M. Shonahar

BM Shanahan SVI Chair

Juneslithour

TWH Kay SVI Director



2008 Institute Highlights

Happy birthday!

In 2008 SVI celebrated its 50th birthday, capped off by a reception at Government House on the 1st of September hosted by the Governor and Mrs Jan de Kretser. In the 50 years since it began, SVI has developed an impressive international reputation, has grown from a staff of 8 to around 200 and its research laboratories now occupy more than 2000m².

Funding success

SVI will receive over \$5.5 million of National Health and Medical Research Council (NHMRC) Project Grant funding over the next 3-5 years to conduct vital research into type 1 diabetes, leukaemia, cancer, heart failure and metabolism. Nearly two thirds of SVI funding comes from Government grants.

Grants from the NHMRC were announced in October 2008, with nine groups of SVI researchers receiving funding. SVI's success rate for Project Grant funding was 42%, well above the national average of 27%.

Grants include over \$1.4 million awarded to Associate Professor Duncan Campbell and colleagues for their research into cardiovascular risk factors. Notably, this grant was awarded for a period of 5 years, as opposed to the usual 3 years of funding. Five groups of researchers investigating cancer received a total of \$3.27 million, which includes two grants awarded to Dr Carl Walkley, and Associate Professor Jörg Heierhorst's grant, which was given a perfect score by reviewers.

Drs Stuart Mannering, Greg Steinberg and Professor Bruce Kemp's research into type 1 diabetes and obesity also received a funding boost of more than \$800,000.

In addition to the Project Grant success, Professor Michael Parker, Head of SVI's Structural Biology Unit, was jointly awarded an NHMRC Program Grant with his collaborator Professor Angel Lopez from The Centre for Cancer Biology, Adelaide. The grant totals more than \$3.7 million, and will go towards the team's research into the GM-CSF hormone receptor and related receptors.

Welcome home

2008 saw the arrival of researchers Louise Purton and Carl Walkley, who returned to Australia from Harvard University to head the new Stem Cell Regulation Unit.

While at Harvard, Carl and Louise published two papers in the prestigious journal Cell, along with SVI's Dr Natalie Sims. Their research showed that the bone marrow, where blood cells are made, may be responsible for blood diseases such as leukaemia. Prior to this work, it was believed that the fault lay within the blood cells themselves. SVI's success rate for Project Grant funding was 42%, well above the national average of 27%

The researchers have already proven themselves in the year since their arrival at SVI, establishing their research team, successfully applying for funding from a variety of funding bodies, and coordinating a number of funding drives for cancer research.



SVI patron Sir Gustav Nossal with past SVI directors, Emeritus Professor Jack Martin and Dr Frank Morgan, and present director, Professor Tom Kay (l-r)

Students at SVI



St Vincent's Institute is a centre of excellence for research into diseases that have a high impact on the community, including type 1 diabetes, obesity and type 2 diabetes, heart disease, arthritis, osteoporosis, cancer and Alzheimer's disease.

SVI offers undergraduate and postgraduate training in cell biology, protein structural biology, biochemistry, immunology and cell signalling, as well as clinical research into diseases including cancer, diabetes and bone disease. "the chance to explore a stimulating area of research guided by leading scientists"



Students at SVI

St Vincent's Student Society

The Student Society is run by students who organise both social and career development events throughout the year, including journal clubs, the comedy festival, rock climbing, interdepartmental soccer, movie evenings and the Postgraduate Ball. The annual Student Retreat, held in Phillip Island in 2008, provides great educational and socialising opportunities for students.

Undergraduate Education

An Honours year at St Vincent's Institute offers you the chance to explore a stimulating area of research guided by leading scientists.

SVI Honours Programs

More information: Associate Professor Ora Bernard, Student Coordinator, SVI Tel: 9288 2480 or email: obernard@svi.edu.au http://www.medstv.unimelb.edu.au/ Prospective/Honours/

Applications close on 30th November each year.

Undergraduate Research Opportunities Program (UROP)

UROP gives undergraduate students the opportunity to undertake paid work in a research laboratory one day a week during semester and full-time during the holidays to gain an insight into a medical research career.

More information: www.bio21.com.au/urop.asp Applications open in April and September and should be lodged directly with Bio21.

Postgraduate Education

Studying for your PhD at SVI will give you the opportunity to carry out research into major diseases under the supervision of leading Australian scientists. There are options to enrol through the University of Melbourne, Department of Biochemistry and the University of Melbourne Departments of Medicine and Surgery at St Vincent's Hospital.

SVI PhD Programs

More information: www.svi.edu.au/education/phdprojects Or contact: Postgraduate Student Coordinator, SVI Tel: 9288 2480 or email: enquiries@svi.edu.au

PhD – finding the root causes of arthritis and osteoporosis

Before undertaking a PhD at SVI, Jonathan Gooi obtained his honours degree in the Anatomy and Cell Biology Department, Melbourne University in spinal cord regeneration.

He said: "I chose to study for my PhD at SVI because of the interesting bone research being undertaken and its excellent international reputation".

Jonathan's PhD, completed in December 2008, focused on the signalling between osteoblasts (bone forming cells) and osteoclasts (bone resorbing cells), specifically identifying bone formation factors released from osteoclasts.

"The benefit of studying at SVI over a larger institute is the fact that there is a good support network throughout the whole institute", he said. "SVI offers plenty of opportunities to present my work nationally and internationally. Furthermore, due to grant funding and the work of the Foundation, SVI provides state of the art equipment".

Scholarship Awards

There are several scholarship options available through the University of Melbourne, NHMRC and SVI:

Australian Postgraduate Awards (APA)

University of Melbourne, Melbourne Research Scholarships (MRS)

University of Melbourne, Melbourne International Research Scholarships (MRS) http://cms.services.unimelb. edu.au/scholarships/pgrad NHMRC Dora Lush Biomedical Postgraduate Research Scholarships http://www.nhmrc.gov.au/fellows/ apply/granttype/scholars/lush.htm

SVI PhD & Honours Scholarships

Students commencing fulltime research at SVI are invited to apply for top-up PhD or Honours awards. Successful applicants will receive a \$5,000 p.a. top-up stipend for 3 years (PhD) or 1 year (Hons).

More information:

www.svi.edu.au/scholarships Or contact: SVI Foundation Student Awards Coordinator Tel: 9288 2480 or email: enquiries@svi.edu.au

PhD applications due: 31 October 2009 Honours applications due: 30 November 2009

Scholarship – finding the link between metabolism and type 2 diabetes

Hayley O'Neill was first introduced to SVI by her Undergraduate Research Opportunities Program (UROP) supervisor and in December 2008, completed her Honours year in SVI's Protein Chemistry and Metabolism Unit with Greg Steinberg.

Hayley's research project focused on AMPK, the body's fuel gauge, which controls the burning of fats and sugars when cells need energy. Her findings at the end of the year contributed to the body of knowledge about AMPK in an area that hasn't been investigated before. Hayley said: "This line of research is absolutely fascinating and I have now been accepted to study the role of AMPK signalling in fat metabolism and during exercise for my PhD in 2009 with Greg Steinberg and Bruce Kemp."

She continued: "The generous scholarship I received from the SVI Support Group was vital to the success of my Honours project. It meant that I didn't have to take on extra part time work and could focus on my studies and complete the project to the best of my ability."

Congratulations to the students undertaking their studies at SVI who were awarded scholarships in 2008:

SVI Support Group sponsored: Shanna Tam Kevin Mittelstaedt

Dansu sponsored:

Julie Quach

Major Engineering sponsored: David Ascher

University of Melbourne sponsored:

Eveline Angstetra David Ascher Eugene Estella Kevin Mittelstaedt

SVI Board of Directors

Ms Brenda M Shanahan 3. BEc Bcomm

Ms Shanahan has a research background in finance in Australian and overseas economies and share markets. She is Chair of St Vincent's Health, Melbourne, Challenger Listed Investments and Clinuvel Pharmaceuticals Ltd; Board member of the Sisters of Charity Health Service Ltd (retired Dec 08); and Non Executive Director of JM Financial Group Ltd. She is a former member of the Australian Stock Exchange and former Executive Director of a stockbroking firm, a fund management company and an actuarial company

Mr Douglas A Wright 10. FAICD FPRIA

Deputy Chair, SVI Mr Wright is a founder and Chair of Wrights, a group of Australianowned communications, marketing, research and IT consultancies. He is a public affairs strategist and has worked in the media and business in Australia and overseas. He is Vice Chair of Worldcom, the largest network of independent public relations firms and a member of the Australian Bankers' Association Small Business Forum. Mr Wright is an Associate Fellow of the Australian Marketing Institute and a Fellow of the Public Relations Institute of Australia, a member of the Counsellors' Academy of the Public Relations Society of America and the Institute of Chartered Public Relations (UK).

Dr Susan M Alberti AO 7. HonLLD

Dr Alberti is co-founder and Managing Director of DANSU Group and associated companies. She has a strong commitment to fundraising and promotion of juvenile diabetes and is the National President of the Juvenile Diabetes Research Foundation Australia and also International Patron and member of the Board of Chancellors of JDRF International. Dr Alberti is Foundation Chair of SVI, Victoria University Foundation Board member and also a Board member of the Western Bulldogs and Co-Chair of the Western Bulldogs Forever Foundation.

Professor James A Angus Until May '08 BSc PhD FAA

Professor Angus is Dean, Faculty of Medicine, Dentistry and Health Sciences, The University of Melbourne. Prior to this appointment, he was Professor and Head of the Department of Pharmacology; and Deputy Dean of the Faculty of Medicine, Dentistry and Health Sciences; President of the Academic Board; and Pro Vice-Chancellor, The University of Melbourne. He is a member of the Bio21 Institute Management Committee and First Vice-President of the International Union of Pharmacology. He has extensive research experience in preclinical pharmacology in the areas of cardiovascular and antinociceptive drugs.

Professor James D Best Until Feb '08 MBBS MD FRACP FRCPath FRCP Edin

Professor Best is Head of the School of Medicine in the Faculty of Medicine, Dentistry and Health Sciences at The University of Melbourne and Professor of Medicine in the Department of Medicine, St Vincent's Hospital, Melbourne. As a member of Council for the National Health and Medical Research Council (NHMRC), he chairs the NHMRC Research Committee.

Mr Jeff Clifton 6. BCE DIPCe Mr Clifton is currently the Managing Director of Clifton

Property Group, which consists of a development management group, Clifton Hall Consulting and a project management. Broup, CBM Project Management. Both companies serve the Australian property industry and Mr Clifton has been in the property industry for over 35 years. Mr Clifton was formerly Executive Chairman of Farsands and Managing Director of the Clifton Coney Group, which are now part of Coffey International following a sale of the business. Mr Clifton is also a Director of OIML Pty Ltd, the responsible entity of the Timbercorp Primary Infrastructure Fund and Chairman of the Becton Development Fund No 1.

Ms Nicole Feely

Until Nov '08 BComm LLB FAICD Ms Feely, Chief Executive Officer, St Vincent's Health, Melbourne (until Nov '08) has a background in business law, politics and administration in both the private and public sectors.

Professor Richard Fox AM 1. MBBS PhD FRACP

Richard Fox is Director of Research at St Vincents Health. He is also Vice President of Cancer Council Victoria; Chair of the Cooperative Research Centre for



Research and Grants committee

Mr Paul Holyoake 2. BEngMech (Hons) MEngSci information technology services company. From June 1988 to June 2005, Mr Holyoake was Managing Director and Chief Executive

Mr Barry J Jackson Until Feb 08

Mr Jackson is a Director of Paperlinx Ltd, Alesco Corporation Ltd (retired 9/08), Equity Trustees Ltd and CSR Ltd (retired 03/07). He was formerly Managing Director of Pacifica Group Ltd from 1995 until 2001 and has over 30 years experience in manufacturing

Professor Thomas WH Kay 4. BMedSc MBBS PhD Melb FRACP FRCPA

Professor Kay is Director of SVI. He holds a Professorial appointment within the Department of Medicine The University of Melbourne He also holds the position of Honorary Endocrinologist at

diabetes

Mr John T Macfarlane 12. From Jul '08 M Comm

& New Zealand following seven years as President and CEO economist by training, Mr Macfarlane held senior positions with Bankers Trust in Sydney, New York and New Zealand until its acquisition by Deutsche Bank in 1999. He has served as: Director Markets Executive Committee, the Global Banking Executive Committee and the Global Regional Management Committee of Deutsche Bank; and Co-Chair of the Asia Pacific Deutsche Bank Executive Management Committee.

Professor James McCluskey 11. From Jul '08 MBBS, B Med Sci, MD, FRACP, FRCPA Dean (Research), Faculty of Medicine Dentistry and Health Sciences and past Head,

and Immunology at The University of Melbourne. He is also a and Immunogenetics Service, Australian Red Cross Blood

Mr Michael McGinniss 5.

Mr McGinniss retired from a Since then he has taken up a number of Board positions in the not-for-profit and commercial sectors and also serves as a Trustee of The Marian & EH Flack Trust.

Ms Ruth O'Shannassy 9.

Ms O'Shannassy worked in economic research in the finance industry in Melbourne before moving overseas. She spent seven primarily as a stockbroker in Cancer Research Consortium

Mr John Pizzey 8. BE(Chem) Fell Dip (Management) FTSE FAICD FAIM

December 2003 where he was Executive Vice President of Alcoa Primary Products. He was Exchange Ltd (UK) in 2003. Mr Pizzey is currently a Director of Alumina Ltd, Amcor Ltd and Iluka at Ivanhoe Grammar School.

Mr Gregory Robinson BSc(Hons) MBA (Columbia)

Mr Robinson is Finance Director, Newcrest Mining, responsible for for leading strategy, planning and business development activities. Prior to joining Newcrest, Mr Robinson was with the BHP Billiton Group for the period 2001 to 2006 where he held the positions of Project Director of the Corporation Alignment Project, Chief Finance and Chief Development Officer, Energy and Chief Financial Officer, Petroleum. Energy Executive Committee and Group Executive Committee. Before joining BHP Billiton, Mr Robinson was Director of Investment Banking at Merrill Pacific Metals and Mining Group.

SVI Foundation, Chair Report



2008 saw the loss of three wonderful SVI supporters to cancer.

In January, my good friend and long time SVI supporter, Roslyn Smorgon passed away. In October, the Italian community mourned the loss of Annette Mascitti. Then in December, the Foundation Board lost Jonathan Rowe, who had given us his enthusiastic support for six years.

It is years like these that galvanise me and my Foundation Board members to work harder.

Work harder to help SVI's researchers.

Work smarter to find new and innovative ways to raise funds.

Work faster to find solutions to devastating diseases like cancer.

New events

This year several new events were launched thanks to the dedication of board members; SVI staff, Robin Berry, Clare Lacey and Jo Crowston; and our sponsors who turn great ideas into reality. The launch of the Roslyn Smorgon Memorial Fund at the Black Tie Dinner in April raised \$366,000 for cancer research. The AFL Collingwood vs St Kilda pre-match breakfast raised \$40,000 for diabetes research. The Bloom Fabrics Fashion Parade raised \$22,000 for cancer research. And the Golf Day raised \$26,600 for heart research.

New ambassadors

Our fundraising efforts were given a boost this year with the help of our new ambassadors, Luke Darcy, James Clement and Ali Moore. James made a heartfelt appeal for people to support diabetes research during his MCG lap of honour. Luke expertly MC'd the football breakfast and Ali's interviewing skills were invaluable at the Deutsche dinner. We are very lucky that these talented people are willing to give up their time to support SVI.

New challenges

Thank you to all those who have donated money, time and skills to SVI this year. With the economic situation affecting so many people I hope you will continue to find ways to support SVI's dedicated scientists find new treatments for cancer, diabetes, arthritis and Alzheimer's.

Wishing you all the best.

God Bless,

enclahert

Dr Susan Alberti AO HonLLD SVI Foundation, Chair

Foundation SVI Highlights

MARCH

Directors Dinner

Guest speaker: Daryl Jackson AO, Director, Daryl Jackson Architects. Held at Crown Towers.

APRIL

Celebrating 50 Years

SVI supporters celebrated 50 years in style, raising a total of \$597,683, including \$366,000 in donations and pledges for The Roslyn Smorgon Memorial Fund for cancer research at SVI. Thanks to the event committee: event chair, Christine Tarascio and members, Sue Alberti, Karen Plant, Benni Aroni and Jeni Coutts.



SVI Director Tom Kay and guest speaker David Smorgon



Sam Tarascio Jr making a speech on behalf of major sponsors, Salta Properties

JUNE

Director's Dinner

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Guest Speaker: John (JT) Macfarlane Chairman, Deutsche Bank AG Australia and New Zealand. Held at Crown Towers.

Young SVI Ball

SVI's young supporters danced the night away at The Melbourne Aquarium to raise funds for SVI's research.

AUGUST

SVI AFL Discovery Day Breakfast August 2008

Raising \$40,000 for diabetes research at SVI was the focus of the Collingwood vs St Kilda pre-match breakfast, hosted by SVI ambassadors James Clement and Luke Darcy. Thanks to the committee: event chair, Brian Cooney and members, Benni Aroni, Karen Plant and Jeni Coutts.



MC and SVI ambassador, Luke Darcy interviewing Lila Holbrook about living with diabetes

Deutsche Dinner

Deutsche Bank's newly appointed Chairman, Australia and New Zealand, JT Macfarlane cemented the bank's long standing relationship with SVI at a celebratory dinner hosted by TV and radio presenter, Ali Moore.

SEPTEMBER

SVI Bloom Fashion Parade

Jacqui and Rachel Bloom hosted a unique fashion parade featuring outfits made from exquisite Bloom fabrics. The event held in honour of their late mother and founder of Bloom Fabrics, Evelyn, raised \$22,000 for cancer research at SVI. Thanks to the committee members, Jacqui Bloom, Rachel Bloom, Karen Plant, Suzan Morlacci and Jeni Coutts.



Celebrity models, Bev Brock, Lauren Newton, Patti Newton & Melinda Gaze in their Bloom Fabric outfit

Director's Dinner

Guest speaker: Frank Costa OAM Chairman and Chief Executive Officer, Costa Group. Held at Hotel Sofitel.

SVI Foundation Highlights

OCTOBER

SVI Nissan Golf Day

SVI's inaugural golf day at Albert Park sponsored by Nissan Fleet was a great success, raising \$26,600 for SVI. Thanks to the committee members: Leon Wiegard, Michael Dwyer, Charlie Happell, Mark Pearce, Anita Struck, Barry Holbrook and Charlie Cracknell.



Leon Wiegard enjoying a day of golf

SVI Support Group Dinner

The SVI Support Group, led by Claire O'Callaghan, organised a successful dinner at the Athenaeum Club raising over \$28,000 to fund SVI Student Scholarships.



The SVI Support Group

Italian Chamber of Commerce Dinner

A Night in Venice, the Italian Chamber of Commerce's annual dinner, was held in aid of SVI, raising \$18,500 for research.

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Trusts and Foundations

Thank you to the following Trusts and Foundations:

The Sydney Maxwell Wellard Estate administered by Equity Trustees funded the purchase of a refrigerated centrifuge machine to speed up research into bone cancer.

The Medical Research and Technology in Victoria - William Buckland Foundation administered by ANZ Trustees funded the purchase of a haematological analyser which automates the analysis of blood cells in the study of leukaemia.

The Mason Foundation funded a new Alzheimer's disease research project.

The Rebecca L Cooper Foundation funded the purchase of a microscopy camera and computer to assist in the isolation of pancreatic cells used for islet transplants for people with diabetes.

The EJ Whitten Foundation funded the work of a scientist researching ways to prevent the spread of cancer.

The Reece Foundation funded general research at SVI.

We would like to thank the 1000 Club subscribers for 2008.

In memory

We are very grateful for the generous donations to research at SVI in honour of Annette Mascitti, who passed away in October 2008. In the years before her death, Annette was passionate about helping SVI give hope to people touched by cancer.



Annette Mascitti

Roslyn Smorgon passed away in January 2008. Roslyn supported SVI in many ways and to pay tribute to her life Susan Alberti set up The Roslyn Smorgon Memorial Fund for cancer research at SVI to which David Smorgon and his family generously donated.



Roslyn Smorgon

Jonathan Rowe

We are sad to report that Jonathan Rowe passed away in December 2008 following a battle with cancer. Jonathan had been a Foundation Board member since its inception in 2003. As an advertising professional he was instrumental in transforming SVI's marketing through the re-launch of the SVI brand and the development of improved marketing tools. In his honour, Susan Alberti has set up the Jonathan Rowe Student Scholarship to fund the work of cancer research students. We will miss his optimism and his enthusiasm for the continued welfare of the institute.



Jonathon Rowe

SVI Foundation Board



Dr Susan M Alberti AO 6. HonLLD

Chair, SVI Foundation Board Group and associated companies. She has a strong commitment to fundraising and promotion National President of the Juvenile Patron and member of the Board of Chancellors of JDRF International. Dr Alberti is a Board member of SVI, Victoria University Foundation Board member and also a Board member of the Western Bulldogs and Co-Chair of the Western Bulldogs Forever Foundation.

Mr Benni Aroni 4. Deputy Chair,

managing partner of his own legal firm between 1982 and 1998. He has been a developer of Eureka Tower from 1998 to date. He now Subsequently he has focused his

companies, listed and unlisted.

Mrs Karen Plant Co-Vice Chair, SVI Foundation

Plant Real Estate, which has over 70 offices throughout Victoria and Southern Queensland. They company Birchbank Homes. Karen's foray into charity work was the refurbishing of the cancer ward at The Royal Children's Hospital. Karen is a board member of The Deakin Foundation, for Deakin University, as well as a member of the REIV Charity Foundation Board. Karen enjoys family life with her husband Barry and children Nicholas and

Mr Robin Berry 1. CEO, SVI Foundation Board Mr Berry has a background in the sports, health and leisure industry. manufacturing and the importing He has successfully launched

Mr Brian Cooney 8

Mr Cooney is one of Australia's leading individuals in the sports management, Mr Cooney has been responsible for some of the biggest commercial arrangements IMG, he has wide experience in dealing with figures from Australia

Jeni Coutts Since Nov '08

Prior to starting her own Corporate Affairs consultancy in 2003, Ĵeni leading corporations including Transurban, Siemens, Hoechst management through to government, community and investor relations. Jeni holds degrees in Public Relations/ Politics and Law and is a Board

providing support services for people with intellectual and psychiatric disabilities and neurological disorders.

Ms Marcia Griffin

Cosmetics and a former Victorian Telstra Business Woman of the Year. Current roles include Directorships of PMP Limited, Holt Private Capital and Griffin and Row Pty Ltd. Marcia is also a TEC Chair-TEC is an organization dedicated to increasing the effectiveness of CEO's. Marcia is an author of a business biography, "High Heeled Success". She is also a motivational speaker and marketing and strategy consultant.

Ms Connie McKeage

Solutions, one of Australia's fastest growing software solutions companies. Prior to her role at Pentafin, Connie held key executive positions with organisations including Bankers Managing Director). She has also in Asia, Canada, Europe and the



USA, where she held the position of Managing Director Global Operations for NewRiver Communications. In 2003 Connie was awarded a Centenary Medal for her contribution to Australian society in the area of Business Leadership.

Mrs Claire O'Callaghan 5. Chair, SVI Support Group A St Vincent's trainee, Mrs O'Callaghan returned to part-time nursing once her five children were in full-time education. She has chaired a number of fundraising and educational organisations including the original Noah's Ark Toy Library for Handicapped Children and is currently Chair of the SVI Support Group.

Ms Brenda M Shanahan 2. Ms Shanahan has a research background in finance in Australian and overseas economies and share markets. She is Chair of SVI, St Vincent's Health, Challenger Listed Investments, Clinuvel Pharmaceuticals Ltd; Board member of the Sisters of Charity Health Service Ltd (retired Dec 08); and Non Executive Director of JM Financial Group Ltd. She is a former member of the Australian Stock Exchange and former Executive Director of a stockbroking firm, a fund management company and an actuarial company.

Mrs Christine Tarascio 7. Chair, Events Committee Mrs Tarascio's family company is Salta Properties Ltd. She has been a very active fundraiser over a long period of time for various causes, including the Lady Mayoress' Charitable Fund, the Queen Elizabeth Centre, PMB (raising funds for prostate cancer research), and Pampering Patients. Mrs Tarascio is currently assisting her family company with the redevelopment of the former Mercy Hospital.

Mr Sam Tarascio

Sam Tarascio has more than 10 years formal hands on experience in the property industry. Following a brief stint at corporate advisory firm Coopers & Lybrand, Sam started his career in property at Jones Lang LaSalle, gaining experience in their property management and then sales and leasing divisions. Sam joined the family company, Salta, in 1999 first in the group's asset management business before moving on to take an active role in the company's largest development at the time, the Victoria Gardens mixed use residential, commercial, and retail precinct. Sam is now Managing Director of Salta Properties.

Fellowships, prizes and grants

Structural Biology

Grants

- P Batterham, MW Parker.
 Functional and regulatory analysis of nicotinic acetylcholine receptors, key targets of insecticides, ARC Discovery Grant
- MW Parker, S Yeen Chai. Structure/function studies of insulin-regulated membrane aminopeptidase. NHMRC Project Grant
- L Miles. Alzheimer's Disease Drug Discovery. Mason Foundation (ANZ Trustees) Grant

Protein Chemistry and Metabolism

Fellowships and Prizes

- Sheena Wee was awarded a Peter Doherty Fellowship

Grants

- BE Kemp, ZP Chen, B Michell. Regulation of protein kinases and their substrates. NHMRC Project Grant
- MJ Watt, BE Kemp. Regulation of lipolysis: new players, new paradigms. ARC Discovery Grant
- GR Steinberg. Adipose tissue SOCS3: role in regulation of insulin sensitivity in obesity. Diabetes Australia Research Trust

Molecular Cardiology

Grants

- DJ Campbell, DL Prior, MJ Black. Cellular and Molecular Determinants of Heart Disease in Metabolic Syndrome and Type 2 Diabetes in Humans. National Heart Foundation Grant

Immunology and Diabetes

Fellowships and Prizes

- Peter Campbell received a Young Investigator Prize from the Transplantation Society of Australia and New Zealand, at the XXII International Congress of the Transplantation Society
- Eugene Estella was awarded the T.J. Martin Prize at St Vincent's Hospital Research Week
- Kate Graham was awarded the Best Scientific Poster at St Vincent's Hospital Besearch Week

Grants

- L Harrison, T Kay, G Morahan, A Lew, P O'Connell. Prevention and cure of type 1 diabetes. NHMRC Program Grant
- J Trapani, T Kay, A Strasser, H Thomas, J Allison. Cell death pathways and type 1 diabetes. NHMRC Special Program Grant in Type 1 Diabetes
- H Thomas, J Allison, T Kay. Apoptotic pathways in pancreatic beta cells leading to type 1 diabetes and transplant rejection. NHMRC Project Grant
- T Loudovaris. Cell Therapy for Type 1 Diabetes. Diabetes Australia Reseach Trust Grant

Bone, Joint and Cancer

Fellowships and Prizes

- Jonathan Gooi was awarded the Roger Melick Young Investigator Award, from the Australian and New Zealand Bone and Mineral Society
- Hasnawati (Nana) Saleh was awarded the Christopher & Margie Nordin Young Investigator Poster Award from the Australian and New Zealand Bone and Mineral Society
- Julie Quach was awarded the Wyeth Young Investigator Award from the Australian and New Zealand Bone and Mineral Society

Stem Cell Regulation

- **Grants** - L Purton. Equipment Grant.
- ANZ Trustees - L Purton. Mechanisms underlying the effects of TNFalpha in bone
- and haemopoiesis. NHMRC Project Grant - C Walkley. Equipment Grant.
- Equity Trustees
- C Walkley. Clive and Vera Ramaciotti Foundation Establishment Gift
- M Askmyr. Understanding the contribution of the hematopoietic microenvironment to hematopoietic diseases. Swedish Research Council Post-doctoral Fellowship

Molecular Genetics

Grants

- J Heierhorst. Identification of telomere-specific recombination pathways. NHMRC Project Grant

Cytoskeleton and Cancer

Grants

- O Bernard. Regulation of the actin cytoskeleton by LIM kinase 2. ARC Discovery Grant
- O Bernard. The role of LIM kinase 2 in cancer metastasis.
 - Cancer Council, Victoria O Bernard. The role of the E3
- ubiquitin ligase Rnf6 in cancer metastasis, AICR

Fellowships and Prizes

- Kevin Mittelstaedt was awarded a SVI Foundation Student Scholarship
- Alice Schofield was awarded a SVI Foundation Student Scholarship

VBCRC Invasion and Metastasis

Grants

- EW Thompson, M Waltham. MMP13 as a therapeutic target in breast cancer. NHMRC Project Grant
- EW Thompson, A Dobrovic, P Choong, P Hill, M Henderson, K Pantel. Exploring epithelialmesenchymal interconversions in the breast cancer metastatic cascade. Cancer Council Victoria Project Grant

L Soon, F Braert, EW Thompson, P Vallotton. A new model for 3D migration involving claw structures and metalloproteinases. ARC Discovery Grant
M Shah, EW Thompson, M Waltham. Targeting host and

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- tumoral MMP-13 in primary breast cancer and bone metastasis. Komen Foundation Postdoctoral Fellowship
- EW Thompson, RL Anderson, A Yap, G Goodall, C Saunders, I Street. Targeting tumour dormancy in breast cancer – Think Tank. NBCF Collaborative Breast Cancer Research Program
- EW Thompson, M Shah, P Hill, J Cawson, WA Morrison, I Haviv, L Soon, R Henry, J Hopper, M Southey. Molecular profiling and epidemiological refinement of mammary gland density as a predictor of breast cancer risk. St Vincent's Hospital Research Endowment Fund

Pharmacogenomics

Fellowships and Prizes

- Sarah Vickery was awarded an AMATA Conference Travel Studentship
- Amanda Burnside was awarded a Cancer Research Vacation Studentship

Grants

- M Waltham. Assessing the potential of N-acetylcysteine (NAC) to combat breast cancer metastasis. NBCF Grant
- EW Thompson, M Waltham MMP-13 as a therapeutic target in breast cancer.
- NHMRC Project Grant EW Thompson, I Haviv, M Waltham. Functional genomics for epithelial-mesenchymal
- transition in breast cancer. US-DOD Idea Grant

NRL

- Grants - D McPhee, K Wilson, EM Dax. Potent broadly reactive neutralizing HIV-1 monoclonal antibodies. NHMRC Project Grant
- EM Dax, S Walker. Capacity Building for Laboratories in Asia and the Western Pacific

Service on Scientific Advisory Boards and Committees

Ora Bernard

- Member, Postgraduate Research Committee, Department of Medicine, St Vincent's Hospital
- Member, PhD Confirmation Committee, Department of Medicine, St Vincent's Hospital

Duncan Campbell

- Member, Scientific Advisory Boards of the International Academy of Cardiology and of the World Congress on Heart Disease

Elizabeth Dax

- Chair, Australian Society of Microbiology, Research Trust Committee
- Immediate Past President, Australasian Society of HIV Medicine
- Vice President, AIDS Society of Asia and the Pacific
- Associate Member, Medical Devices Evaluation
- Member, AHMAC Blood Safety and Quality Working Group
- Member, NCCTG In vitro Diagnostics Working Group
- Member, Eye Research
- Foundation Fundraising Group

Wayne Dimech

- National Examination Council Member, Australian Institute of Medical Scientists
- State Convener/ National Secretary, Clinical Serology and Molecular Special Interest Group, Australian Society for Microbiology

Matthew Gillespie

- Member, Cancer Council of Victoria
- Member, Science Policy Committee of the American Society for Bone and Mineral Society
- Member, NHMRC Research Committee
- Chair, NHMRC Project
- Grants Working Group - Chair, Membership and
- Education Committee, International Bone and Mineral Research Society

Andrew Hammet

- Member, SVI Space Committee

Jörg Heierhorst

- Member, NHMRC Project Grant Review Panel
- Member, Cancer Council Victoria Medical & Scientific Committee
- Member, Early Career Researcher Committee, Victorian Cancer Agency
- Member, Human Research Ethics Committee, St Vincent's Health
- Member, SVI/Department of Medicine Seminar Committee
- Member, SVI Mass Spec Committee
- Member, SVI Student Committee
- Member, SVI Senior Scientist
- Committee

Thomas Kay

- Member, Bio21 Scientific Advisory Committee
 Member, VBCRC Scientific
- Committee - Member, Executive Committee
- Research Council, St Vincent's Hospital
- Member, National Serology Reference Laboratory Management Committee
- Member, Medical and Scientific Advisory Committee, Juvenile
- Diabetes Research Foundation - Chair, JDRF Medical Scientific Review Committee, Immunology and Transplantation Panel
- Member, Research Council, Diabetes Australia
- Member, St Vincent's Hospital Medical Executive Committee

Bruce Kemp

- Member, Scientific Advisory Board, Mercury Therapeutics, Boston
- Chairman, CSIRO Molecular
 & Health Technologies
 Science Council

Tom Loudovaris

- Member, Occupational Health and Safety Committee, SVI

Jack Martin

- Member Scientific Advisory Board, Botnar Research Centre, Nuffield Orthopaedic Centre, University of Oxford, UK
- Elected Vice-Chairman, International Society, "Cancer and Bone Society
- Member, NHMRC Human Genetic Advisory Committee
- Chairman, Medical Research Advisory Committee, Australian Cancer Research Foundation

Dale McPhee

- Chair, Academic Advisory Committee, School of Biological and Chemical Sciences, Deakin University
- Member, National Centre in HIV Epidemiology and Clinical Research Working Group, Sydney
- Member, Executive Committee, Immunovirology Research Network

Michael Parker

- Member, BioCARS Sub-Committee of the Australian
- Synchrotron Research Program - Member, Oversight Committee
- of the Bio21 C3 Facility - OzReader, Australian Research
- Council Grants - Chair, SVI Equipment Committee
- Member, SVI Commercialisation
- Committee

Louise Purton

- Member, NHMRC Training Fellowships Grant Review Committee

Evange Romas

- Co-Chair, Scientific & Program Committee, Australian Rheumatology Association - Member, Scientific Advisory Board, Australian Rheumatology Association Research Trust - Member St Vincent's Hospital

- Member, St Vincent's Hospital

- Member, St Vincent's Hospital

Animal Ethics Committee

Postgraduate Student

Anne Thorburn

Committee, SVI

Committee

Control

Society

Society

Confirmation Committee

Member, Building Space

Brvce van Denderen

Institutional Biosafety

Service on Boards

Duncan Campbell

Matthew Gillespie

and Editorial Boards

- Member, Editorial Board,

Integrated Blood Pressure

- Board Member, International

Bone and Mineral Research

- Board Member, Australian and

- Editorial Board, Arthritis

- Editorial Board, BoneKey

- Editorial Board, Journal of

- Editorial Advisory Board.

- Associate Editor, Journal

- Editorial Board, Cellular

- Editorial Board, Journal of

- Guest Editor, Circulation

Research, Cardiac AMP-

Activated Protein Kinase

Chairman, Review Panel for

the de Duve Institute, Brussels

- Board Member, Victorian Breast

Cancer Research Consortium

- Associate Editor, Endocrinology

in Health and Disease

Biochemistry Group

- Associate Editor, Bone

Tissue International

Clinical Investigation

- Associate Editor, Calcified

- Editorial Board, Journal of

Editorial Board, Arthritis

Research and Treatment

- Editorial Board, Trends in

- Editorial Board, BoneKey

Dale McPhee

Natalie Sims

Robyn Starr

- Editorial Board, Bone

- Editorial Board, Cytokine

and Growth Factor Reviews

57

Endocrinology and Metabolism

- Editorial Board, Advisory Board,

Journal of Biomedical Science

Jack Martin

- Editorial Advisory Board, The

Bone and Mineral Research

Journal of Oral Biosciences

of Molecular Endocrinology

- Regional Editor, Autoimmunity

Associate Editor, Endocrinology

Molecular and Genetic Medicine

Open Enzyme Inhibition Journal

and Rheumatism

Thomas Kay

Bruce Kemp

Signalling

- Editorial Board, Bone

New Zealand Bone and Mineral

Boris Sarcevic

- OzReader, Australian Research Council
- NHMRC grant review panel member
- Chair, SVI/Department of Medicine Seminar Committee
- Chair, SVI Mass Spectrometry Committee
- St Vincent's Research Week Junior Investigator Award Judge

Robyn Starr

- Panel Chair, NHMRC Career Development Award Assessment Committee
- Member, UROP Committee (Bio21)

Gregory Steinberg

- Member, SVI Equipment Committee
- Member, SVI Postgraduate Research Scholarships Committee

Helen Thomas

- Member, SVI Postgraduate Research Scholarships Committee

Erik Thompson

- Chair, Paget-Ewing Award Committee, (International) Metastasis Research Society
- Treasurer, The EMT International Association (TEMTIA)
- Member, Metastasis Research Society Board
- Member, Australasian Microarray & Associated Technologies Association Committee
- Member, Research Advisory Committee, National Breast Cancer Foundation, Australia
- Member, NSW Cancer Institute Review Panel
- Member, Cancer Australia Review Panel
- Member, NHMRC Grant Review Panel GRP 1g – Cancer Biology
- Member, National Breast Cancer Foundation Review Panels for Scholarships, Fellowships and Career Awards
- Member, Bernard O'Brien Institute for Medical Research Scientific Oversight Committee
- Member, Tissue Resource Management Committee, Shared SVH/PeterMac Tissue Bank
- Member, St Vincent's Hospital Cancer Steering Committee
 Member, University of Melbourne

working group for the

Research Centre

Committee

St Vincent's International

Bioresource Centre Users

- Member, St Vincent's Hospital

Member, Victorian Functional

Committee, Peter MacCallum

Genomics Centre Steering

Cancer Centre (AMATA

Representative)

Gregory Steinberg

- Editorial Board, American Journal of Physiology Endocrinology and Metabolism

Erik Thompson

- Associate Editor, The Breast Journal
- Associate Editor, Cells, Tissues Organs
- Associate Editor, Clinical and Experimental Metastasis
- Guest Editor, Cells Tissues Organs
- Special Issue on the 2nd International EMT Conference
- Guest Editor, Clinical and
- Experimental Metastasis - Special Issue on Epithelial Mesenchymal Transitions in Cancer

Anne Thorburn

- Editor, Obesity Reviews

Kong Wah Ng

- Editorial Board, Bone

Service on Conference Organising Committees

David Ascher

- Member, Royal Australian Chemical Institute, Victorian Branch

Elizabeth Dax

Member, International Advisory Committee for 9th International Congress on AIDS in Asia and the Pacific, Jakarta

Wayne Dimech

- Local Organising Committee; National Australian Society for Microbiology Conference, 2008
- Organiser, National Serology Reference Laboratory, Australia Workshop on Serology, 2008

Matthew Gillespie

- Program Committee, IBMS Davos Workshop: Bone Biology & Therapeutics, Davos, Switzerland, 2008
- Program Chair, Australian and New Zealand Bone and Mineral Society, Melbourne, 2008
- Program Committee, International Bone and Mineral Society and Australian and New Zealand Bone and
- Mineral Society, Sydney, 2009 - Program Chair, Cancer and
- Bone Society, Sydney, 2009 - Chair, Membership and Education Committee for the International Bone and Mineral Research Society

Jörg Heierhorst

- Member, Organising Committee, 4th Australian Telomere Workshop, Sydney, 2008
- Member, Organising Committee, 11th Australian Cell Cycle Workshop, Melbourne, 2008

- Session Chair, EMBO Conference Telomeres and DNA damage response, Villars, Switzerland, 2008
- Member, Organising Committee, 31st Annual Lorne Genome Conference, Lorne, 2010

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Bruce Kemp

- Member, Organising Committee, Lorne Conference on Protein Structure and Function
- Chair, Finance Subcommittee, Lorne Conference on Protein Structure and Function

Jack Martin

- Co-organiser, International Conference, "Cancer-induced Bone Diseases", Sydney
- Program Committee, Symposium on Cell and Molecular Biology of Bone, Davos, Switzerland
- Member, Program Organising Committee, International Congress of Endocrinology, Rio de Janiero, 2008
- Co-organiser, Symposium on Paget's Disease, Oxford, UK

Michael Parker

- Vice-President, Lorne Protein Organising Committee
- Chair, Program Sub-Committee of the Lorne Protein Organising Committee
- Member of the Scientific Programme Advisory Committee for the OzBio2010 Conference, Melbourne, 2009
- Member of the Organising Committee for "Complement, Perforins and bacterial cholesterol dependent cytolysins: the hole family", Prato, Italy, 2009

Louise Purton

 Abstract reviewer and session chair, The 50th Annual Meeting of the American Society for Hematology, San Francisco, USA

Boris Sarcevic

- Member, St Vincent's Research Week Organising Committee, St Vincent's Hospital
- Organising committee, Australian Cell cycle Workshop

Erik Thompson

- Co-Chairperson, Program Committee, 2008 Joint
 Metastasis Research Society – AACR Conference on Metastasis
- 2008, Vancouver, Canada - Program Committee, 4th Pacific Rim Breast and Prostate Cancer Conference, Whistler Blackcomb Resort, Canada

Collaborations

Structural Biology

- Prof L Tilley, Department of Biochemistry, La Trobe University. Malarial proteins
- Dr B Rawlinson, Department of Microbiology, Prince of Wales Hospital, NSW. Cytomegalovirus
- Dr D Rhodes, Avexa, Victoria. HIV
- Dr S Tucker, Biota, Victoria. Viral respiratory diseases
- Dr O Bernard, SVI. LIM kinase
- Prof P Board, John Curtin School of Medical Research, Australian National University. Glutathione transferases
- Prof D Bowtell, Peter MacCallum Cancer Institute. Proteins involved in ubiquitination
- Prof A Frauman, Department of Medicine, Austin Health, The University of Melbourne. Prostate cancer proteins
- Prof B Kemp, SVI. Protein kinase regulation
- Prof A Lopez, Hanson Centre for Cancer Research. Cytokine receptor
- Prof J Martin, SVI.
 Phosphodiesterases
- Prof E Simpson, Prince Henry's Institute of Medical Research. Steroid receptors
- Dr D Stapleton, Bio21 Institute. Protein kinase regulation
- Prof M Vadas, Centenary Institute for Cancer Research. Protein kinases
- Dr M Waters, IMB, University of Queensland. Growth hormone receptor
- Dr A Albiston, Howard Florey Institute. IRAP
- Dr R Cappai, Department of Pathology, The University of Melbourne. Proteins implicated in Alzheimer's disease
- Dr K Barnham, Department of Pathology, The University of Melbourne. Proteins implicated in Alzheimer's disease
- Dr S Y Chai, Howard Florey Institute. IRAP
- Prof C Masters, Department of Pathology, The University of Melbourne. Proteins implicated in Alzheimer's disease
- Dr F Mendelsohn, Howard Florey Institute. IRAP
- Dr S Petrou, Department of Physiology, University of Melbourne. Ion channels
- Dr S Bottomley, Department of Biochemistry and Molecular Biology, Monash University. Serpins
- Dr J Gamble, Centenary Institute for Cancer Research. Protein kinases
- Dr R Pace, Department of Chemistry, Australian National University. Photosystem II
- Dr P Thompson, Department of Medicinal Chemistry, Victorian College of Pharmacy.
- Phosphodiesterase inhibitors

- Dr R Tweten, Department of Microbiology and Immunology, University of Oklahoma. Poreforming toxins and receptors
- Dr G van der Goot, Department of Biochemistry, University of Geneva. Aerolysin
- Prof P Dyson, Ecole Polytechnique Federale de
- Lausanne. Cisplatin drugs - Prof M Lo Bello, Department
- of Biology, University of Rome "Tor Vergata". Glutathione transferases
- Dr L Garcia-Fuentes, University of Almeria. Glutathione transferases
- Dr G Stenberg, Department of Biochemistry, Uppsala University. Glutathione transferases
- Dr M Scanlon, Department of Medicinal Chemistry, Victorian College of Pharmacy. HIV integrase
- Dr Stuart Pitson, Hanson Institute. Sphingosine Kinase
- Dr Matthew Perugini, Bio21 Institute, Melbourne University. Bacterial virulence factors
- Prof Philip Batterham, Bio21 Institute, Melbourne University. Insecticide targets
- Dr Tracy Bryan, Children's Medical Research Institute, Sydney Telomerase
- Dr Scott Cohen, Children's Medical Research Institute, Sydney Telomerase
- Prof Phil Robinson, Children's Medical Research Institute, Sydney Brain proteins
- Dr Adam Ratner, Columbia University, New York. Toxins
- Dr Guiying Nie, Prince Henry's Institute of Medical Research. PC6
- Dr Craig Harrison, Prince Henry's Institute of Medical Research. PC6

Protein Chemistry and Metabolism

- Dr L Macaulay, CSIRO Molecular Health Technologies. Lipid metabolism, obesity
- Dr M Febbraio, Baker Heart Research Institute. Inflammation and insulin resistance
- Dr L Witters, Darmouth Medical College. AMPK structure and function
- Dr D Power, Austin Research Institute. AMPK and kidney function
- Dr G McConell, Department of Physiology, University of Melbourne. AMPK and exercise
- Dr D Allen, Department of Physiology, University of Sydney.
 AMPK and ion transport
- Dr A Means, Duke University Medical Centre. CaMKK structure and function
- Dr J Hawley, RMIT University. AMPK in exercise and type 2 diabetes
- Dr M Birnbaum, Howard Hughes Medical Institute. Skeletal muscle AMPK physiological functions

- Dr M Ernst, Ludwig Institute of Cancer Research. gp130 signalling and metabolism

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- Dr B Kingwell, Baker Heart Research Institute. Lipoprotein regulation of AMPK
- Prof M Hargreaves, Department of Physiology, University of Melbourne. AMPK and skeletal muscle during exercise
- Dr G Lynch, Department of Physiology, University of Melbourne. Regulation of AMPK by muscle contraction
- Dr A Hevener, Department of Endocrinology, University of California. Inflammation and insulin resistance
- Dr A Wilson, St Vincent's Hospital. Insulin resistance, adipocyte biology and cardiovascular disease

Molecular Cardiology

- A/Prof D Kelly and Prof R Gilbert, The University of Melbourne, Department of Medicine, St Vincent's Hospital. The effect of renin inhibition in the diabetic TGR(Ren-2) rat
- Mr M Yii, Mr J Kenny and Mr Andrew Newcomb, Cardiothoracic surgery, St Vincent's Hospital. Establishment of SVHM Cardiac Tissue Bank
- Dr D Prior, Cardiology, St Vincent's Hospital. Investigation of the pathogenesis of diastolic dysfunction
- Dr B Dixon and A/Prof J Santamaria, Intensive Care Unit, St Vincent's Hospital, Melbourne. Investigation of the systemic inflammatory response to cardiopulmonary bypass
- Dr MJ Black, Department of Anatomy, Monash University. Investigation of the pathogenesis of diastolic dysfunction
- Prof H Krum, Department of Epidemiology and Preventive Medicine, Monash University.
 Strategies for the detection of heart failure in the community
- Prof K Bernstein, Emory University and Pierre Corvol, INSERM U36. Study of genetic models of ACE gene expression
- Prof F Alhenc-Gelas and Dr M Azizi, INSERM U367. Study of the effects of kallikrein gene mutation on urinary kallidin levels in humans

Immunology and Diabetes

- Dr T Brodnicki, The Walter and Eliza Hall Institute. Identification of Mouse
- Diabetes Susceptibility Genes - Prof P Cowan, St Vincent's Hospital, Melbourne. Overexpression of antioxidant
- proteins in pancreatic beta cells - Dr S Grey, Garvan Institute. The mechanism by which A20 promotes allograft survival

- Prof L Harrison, The Walter and Eliza Hall Institute. Prevention and cure of type 1 diabetes: CD8+ T cells in diabetes pathogenesis
- A/Prof A Lew, The Walter and Eliza Hall Institute. Cell death pathways in pancreatic beta cells
- Dr R Sutherland, The Walter and Eliza Hall Institute. Pancreatic islet transplantation
- Dr B Marsh, Institute of Molecular Bioscience, Brisbane. Characterisation and modulation of beta cell-macrophage interactions
- Prof C Parish and Dr C Simeonovic, Australian National University. The role of heparanase and heparin sulphate in islet destruction
- A/Prof P O'Connell, Westmead Millennium Institute. Clinical islet transplantation
- Dr P Santamaria, The University of Calgary. Mechanisms of pancreatic beta cell death in TCR transgenic mouse models of type 1 diabetes
- Prof A Strasser, The Walter and Eliza Hall Institute. T-cell mechanisms of beta cell destruction
- Prof R Thomas, The University of Queensland. Clinical trial of Anakinra in type 1 diabetes mellitus
- Prof J Trapani, Peter McCallum Cancer Institute. T-cell mechanisms of beta cell destruction

Signal Transduction

- Prof M Smyth and Dr A Uldrich, PeterMacCallum Cancer Institute. Assessing IFN sensitivity of an IFNGR1 mutant mouse strain
- Drs Margaret Hibbs and Mhairi Maxwell, Ludwig Institute for Cancer Research. Characterisation of mice expressing a kinase-dead form of Lyn kinase
- Prof P Hertzog and Dr N Mangan, Monash Institute of Medical Research. Assessing anti-viral responses in IFNGR1 mutant mice

Bone, Joint and Cancer

- Dr J Carlyle, Sunnybrook Research Institute. OCIL actions on Natural Killer cells
- Dr D Curtis, Royal Melbourne Hospital Patched and osteoblasts
- Dr P Croucher, University of Sheffield. Myeloma effects upon bone cells
- Prof P Ebeling, Western Hospital, Melbourne Hypophosphatasia
- Dr A Evdokiou, The Hanson Institute, TRAIL and bone metabolism
- Dr A Fosang, Murdoch Childrens Research Institute. Aggrecan effects upon the growth plate

Collaborations

- Dr E Gardiner, Princess Alexandra Hospital. NPY actions on bone
- Dr M Henderson, Peter McCallum Cancer Institute. Breast cancer metastasis
- Dr M Karsdal, Nordic Biosciences. Bone anti-resorptives
- Dr N Kulkarni, Eli Lilly and Company. PTH anabolic actions
- Dr JP Levesque, Biotherapy Program, Mater Medical Research Institute, University of Queensland. Effect of stem cell mobilization on bone formation
- Dr K Matsuo, Keio University, Japan. Eph and Ephrin interactions in bone
- Dr J Onyia, Eli Lilly and
- Company. PTH anabolic actions
- Dr P Pivonka, The University of Melbourne. Mathematical modelling of bone turnover
- A/Prof J Price, Department of Biochemistry, Monash University. Stress proteins and anti-oxident effects in breast cancer bone metastasis
- Dr S Richardson, LaTrobe University. Bone phenotype of transthyretin knockout mice
- Prof M Rogers, University of Aberdeen GPR55 and bone metabolism
- Dr D Smith, The University of Melbourne. Mathematcial modelling of bone turnover
- Dr M Smyth, Peter MacCallum Cancer Institute. Natural killer cell and dendritic cell functions
- Dr D Thomas, Peter MacCallum Cancer Institute. Wnt Inhibitory Factor 1 in bone metabolism
- Dr T Tiganis, Monash University T-cell PTP in bone metabolism.
- Dr I Winkler, Biotherapy Program, Mater Medical Research Institute. Effect of stem cell mobilization on bone formation

Stem Cell Regulation

- A/Prof Grant McArthur, Peter MacCallum Cancer Centre. Roles of retinoids in leukaemia
- Prof S Orkin, Dana-Farber Cancer Institute, Children's Hospital Boston, Harvard Stem Cell Institute, Harvard Medical School, Howard Hughes Medical Institute. Characterisation of a new model of Osteosarcoma

Haematology and Leukaemia

- A/Prof R Starr, SVI. The role of SOCS proteins in early T cell development
- Dr L Robb, The Walter and Eliza Hall Institute. A mouse model of myeloid leukaemia
- Dr R Johnstone, The Peter MacCallum Cancer Centre. Genes involved in T cell leukaemia
- Dr S Russell, The Peter MacCallum Cancer Institute. Cell polarity in T cells
- Prof H Nandurkar, St Vincent's Hospital. A mouse model of B cell lymphoma

- Dr A Wei, Alfred Hospital. Modelling human leukaemia in mice

Cell Cycle and Cancer

- Dr H Richardson, Peter MacCallum Cancer Institute. Regulation of cell cycle progression by CDK-mediated phosphorylation of the Brahma SWI/SNF chromatin-remodeling complex
- Dr Ora Bernard, SVI. Regulation of LIMK activity and microtubule dynamics by phosphorylation

Molecular Genetics

- Prof Ming-Daw Tsai, Ohio State University. Structural analyses of FHA domain functions
 Prof S Takeda, Kyoto
- University. Analyses of novel DNA repair pathways
- Prof B Andrews, University of Toronto. Robotic synthetic genetic array analysis of the yeast MDT1 gene
 Dr M Basrai, NIH. Robotic
- genetic analyses of the yeast ESL genes
- A/Prof T Preiss and Dr T Beilharz, Victor Chang Institute. Transcriptome analyses of ESL genes
- A/Prof P Most, Jefferson University Philadelphia. S100A1 functions in the heart

Cytoskeleton and Cancer

- Prof P Robinson, Children's Medical Research Institute. Identification of the LIMK1interacting protein p25 and determination of its phosphorylation sites
- Prof J Bamburg, Colorado State University. The role of LIMK1 in the regulation of microtuble disassembly
- Dr R Anderson, Peter MacCallum Cancer Centre. The role of LIMK1 in cancer metastasis
- Dr I Street, Walter and Eliza Hall Institute. The search for LIMK1 inhibitors
- Prof Pekka Lappalainen, Institute of Biotechnology, University of Helsinki, Helsinki, Finland.
 Twinfilin, a new LIMK2 substrate
- Dr Matt Watt, Monash University. The role of LIMK2 in controlling obesity

VBCRC Invasion and Metastasis

- A/Prof P Hill, St Vincent's Hospital. Analysis of epithelial - mesenchymal transition markers in archival breast cancer specimens, mammographic density
- Dr R Anderson, Peter MacCallum Cancer Centre. MMPs in mouse mammary metastasis model; breast cancer growth and metastasis in MMPdeficient mice
- A/Prof I Campbell, Peter MacCallum Cancer Centre. Genotyping breast cancer cell variants

- A/Prof M Henderson, Department Of Surgery, University of Melbourne. Studies in clinical breast cancer specimens

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- Dr D Newgreen, Murdoch Children's Research Institute Epithelio-Mesenchymal Transition (EMT) in breast cancer
- A/Prof L Ackland, Deakin University. Epithelio-Mesenchymal Transition EMT) in breast cancer
 - Dr J Price, Monash University, Department of Biochemistry.
 Epithelio-Mesenchymal Transition (EMT) in breast cancer, Molecular determinants
- of bone metastasis - Dr M Waltham, SVI. MMP inhibition studies in breast cancer systems and gene array analysis of epithelialmesenchymal transition
- Dr E Williams, Monash Institute for Medical Research. Studies on bladder and prostate cancer progression and metastasis to bone
- Dr N Ahmed, Department Obstetrics and Gynecology, University of Melbourne. EMT in ovarian cancer spheroids
- Dr L Soon, Australian Key Centre for Microscopy and Microanalysis, NANO-MNRF, Sydney. Breast cancer cell migration in 3-D
- Prof R Henry, Monash
- University. SAXS analysis for mammographic density - Dr I Haviv, Peter MacCallum
- Cancer Centre. Species-specific gene array for tumour stromal interactions
- Prof J Hopper, Centre for MEGA Epidemiology, University of Melbourne. Molecular / cellular analysis of mammographic density
- Dr M Southey, University of Melbourne, Department of Pathology. Molecular / cellular analysis of mammographic density
- Prof K Stanley, University of New South Wales & Corbett Research. Multiplex tandem PCR (MT-PCR) for paraffin-embedded archival material and EMT
- Dr A Swarbrick The Garvan Institute, PyMT syngeneic model of mouse mammary cancer in FVB/n mice
- Dr E Marcusson, ISIS Pharmaceuticals, Carlsbad, CA, USA. Antisense oligonucleotides
- in breast cancer - Dr R Fridman, Department of Pathology, Wayne State University, Detroit, USA. MMP-integrin interactions
- Prof Avhram Raz, Karmanos Cancer Center, Detroit, USA. Role of galectin-3 in breast cancer progression

- Prof Hiroshi Sato, Kanazawa Medical School, Japan. MT-MMP regulation and epithelio-mesenchymal transition
- Prof Motoharu Seiki, Department of Cancer Cell Research, Institute of Medical Science, University of Tokyo, Japan. Collagen regulation of MT1-MMP function
- Prof Z Werb, Department of Anatomy, University of California, San Francisco, USA. MMP-13 involvement in breast cancer progression
 Dr T Sasaki, Max Planck
- Institute, Germany. SPARC/ osteonectin/BM40 effects on MMP-2-activation in breast cancer cells

Pharmacogenomics

- A/Prof T Brown, Monash University. Role of hyluronan sythase in breast cancer progression
- Dr A Stevenson, CSIRO. Phase-contrast X-ray radiography in biomedical research
- A/Prof EW Thompson, SVI. MMP inhibition studies in breast cancer systems and gene array analysis of epithelialmesenchymal transition
- Dr T Rowe, Arana Therapeutics. New anticancer agents
- Dr R Anderson, Peter MacCallum Cancer Centre. Mouse models of cancer metastasis
- Dr J Kennedy, ENT Department, St Vincent's Hospital. Gene expression analysis of acoustic neuromas

NRL

- Dr G Vercauteren, Department of Essential Health Technologies, WHO, Geneva. HIV Testing Strategies
- Dr G Dore, NCHECR. Detailed investigation of the humoral immune response to HCV to identify diagnostic and prognostic serological markers
- Dr A Kelleher, NCHECR. Characterising antibody responses for HIV Long Term Non-progressors
- Dr P Gorry, Burnet Institute.
 Pathogenesis of HIV Long Term Non-progressors
- Dr M Churchill, Burnet Institute. Pathogenesis of HIV Long Term Non-progressors
- Dr J Learmont, ARCBS. Pathogenesis of HIV Long Term Non-progressors
- Dr J Sullivan, ARCBS. Pathogenesis of HIV Long
- Term Non-progressors - Dr W Dyer, ARCBS. Pathogenesis of HIV Long Term Non-progressors
- Prof S Crowe, Burnet Institute Unusual HIV Infections

Presentations

Structural Biology

Michael Parker

- BIT's 1st Annual Protein and Peptide Conference (PepCon-2008), "From Concept to Market", Shenzhen, China. Invited speaker
- The Joint Pacific Rim International Conference on Protein Science and the 4th Asian Oceania Human Proteome Organisation, Cairns. Invited speaker
- Hanson Institute,
- Adelaide. Seminar speaker - St Vincent's Hospital, Grand Rounds Bench to Bedside Research Forum, Melbourne. Seminar speaker
- Prince Henry's Institute, Melbourne. Seminar speaker
- Department of Biochemistry, La Trobe University, Melbourne. Seminar speaker
- Royal Society of Victoria, Melbourne. Invited speaker

Galina Polekhina

- Australian Frontiers of Science Conference. Invited speaker

Protein Chemistry and Metabolism

Bruce Kemp

- FASEB Summer Research Conference "AMPK in Sickness and Health: From Molecule to Man". Snekkersten, Denmark. Invited speaker
- Molecules to Man Seminar Series, St Vincent's Hospital campus Fitzroy. Seminar speaker
- CSIRO National Flagship Health, Werribee. Invited speaker
- Michael Clark Symposium, Hobart. Invited speaker
- CSIRO Molecular Health Technologies, Parkville. Seminar speaker

Sebastian Beck Jorgensen

- FASEB Summer Research Conference "AMPK in Sickness and Health: From Molecule to Man". Snekkersten, Denmark. Invited speaker

Gregory Steinberg

- FASEB Summer Research Conference "AMPK in Sickness and Health: From Molecule to Man". Snekkersten, Denmark. Invited speaker
- 4th Scientific Meeting of Asia-Pacific Diabetes and Obesity Study Group, Kobe, Japan. Invited speaker
- Molecules to Man Seminar Series, St Vincent's Hospital campus Fitzroy. Seminar speaker Prince Henry's Institute,
- Clayton. Seminar speaker

Bryce van Denderen

- FASEB Summer Research Conference "AMPK in Sickness and Health: From Molecule to Man". Snekkersten, Denmark. Invited speaker
- Department of Biochemistry University of Dundee, Scotland Invited speaker

Shanna Tam

The Monash University Faculty of Pharmacy and Pharmaceutical Sciences, 3rd Annual Postgraduate Research Symposium 2008

Molecular Cardiology

Duncan Campbell

- 4th Asian Pacific Congress on Heart Failure, Melbourne. Speaker
- Renin Summit, Berlin, Germany. Invited speaker
- Hypertension 2008, joint congress of 18th Scientific Meeting of the European Society of Hypertension and the 22nd Scientific Meeting of the International Society of Hypertension, Berlin, Germany. Speaker
- 56th Annual Meeting of the Cardiac Society of Australia and New Zealand, Adelaide. Invited speaker

Immunology and Diabetes

Thomas Kay

- National Institute for Health, Bethesda, Maryland. Invited speaker
- Keystone Meeting on Islet Biology, Snowbird, Utah. Invited speaker
- American Diabetes Association 68th Scientific Sessions meeting, San Francisco. Speaker
- Diamantina Institute for Cancer, Brisbane. Invited speaker

Eveline Angstetra

- SVI/Department of Medicine Seminar Program. Speaker

Kate Graham

- XXII International Congress of The Transplantation Society, Sydney. Speaker
- ADS & ADEA Annual Scientific Meeting, Melbourne. Speaker
- ASI Annual Scientific Meeting, Canberra. Speaker

Balasubramanian

- Krishnamurthy
 Australasian Autoimmunity Workshop, Garvan Institute, Sydney. Invited speaker.
- ADS & ADEA Annual Scientific Meeting, Melbourne. Speaker

Mark McKenzie

13th EASD/JDRF Oxford Workshop, "Inflammation, islets and immunity", Oxford, UK. Invited speaker

Helen Thomas

- 13th EASD/JDRF Oxford Workshop, "Inflammation, islets and immunity", Oxford, UK. Invited speaker
- Australian Islet Study Group, Garvan Institute, Sydney. Invited speaker
- Australasian Autoimmunity Workshop, Garvan Institute, Sydney. Invited speaker
- SVI Young Guns of Immunology, Melbourne. Seminar speaker
- Murdoch Childrens Research Institute, Melbourne.

Seminar speaker

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Signal Transduction Robyn Starr

- Brisbane Immunology Group Scientific retreat, Marcoola Beach, Sunshine Coast. Invited speaker
- Immunology Group Victoria Annual Meeting, Yarra Valley. Invited speaker
- WEHI/Howard Florey Institute Postdoc Associations Career Talk, WEHI. Invited speaker
- Baker Heart Research Institute student retreat, Phillip Island. Invited speaker
- SVI student retreat, Phillip Island. Invited speaker
- Fitzroy High School Career Talk. Invited speaker

Bone, Joint and Cancer

Elizabeth Allan

Australian and New Zealand Bone and Mineral Society Annual Scientific Meeting, Melbourne. Oral presentation

Ally Chau

- Lorne Cancer Conference, Lorne. Poster presentation

Vanessa Cheung

- Lorne Cancer Conference, Lorne. Poster presentation

Jonathan Gooi

- SVI Seminar Series. Final PhD seminar
- Australian and New Zealand Bone and Mineral Society Annual Scientific Meeting, Melbourne. Oral presentation
- American Society for Bone and Mineral Research Annual Scientific Meeting, Montreal, Canada. Plenary poster presentation
- Eli Lilly and Company. Indianapolis, USA. Invited seminar
- University of Missouri-Kansas City, Kansas City, USA. Invited seminar

Pat Ho

Australian and New Zealand Bone and Mineral Society Annual Scientific Meeting, Melbourne. Poster presentation

Jack Martin

- Endocrine Society of South Africa, Capetown, South Africa. Invited speaker
- National Osteoporosis Foundation of South Africa in Capetown. Invited speaker - Australian and New Zealand
- Bone and Mineral Society Postgraduate Meeting. Melbourne. Invited speaker
- University of Connecticut Advances in Bone Biology. Invited speaker
- Second Osteoimmunology Conference, Rhodes, Greece. Invited speaker
- Northern Lights on Prostate Cancer, University of Umea, Sweden. Invited speaker
- Tokyo Medical and Dental University Research Symposium.

Invited plenary speaker

- International Congress of Endocrinology, Rio de Janeiro. Invited speaker
- Australian Health and Medical Research Conference Invited speaker

Narelle McGregor

- Australian and New Zealand Bone and Mineral Society Annual Scientific Meeting, Melbourne. Poster presentation

Done Onan

Australian and New Zealand Bone and Mineral Society Annual Scientific Meeting, Melbourne. Poster presentation

Annual Scientific Meeting,

Australian and New Zealand

Bone and Mineral Society

Annual Scientific Meeting,

Melbourne. Poster presentation

Melbourne. Poster presentation

Clare Bone Meeting, Clare Valley,

South Australia. Invited speaker

Sueli Pompolo - Australian and New Zealand Bone and Mineral Society

Julie Quach

Evange Romas

- 3e (Evidence, Experts,

Methotrexate use in the

France. Invited speaker

rheumatic diseases Paris

- Australian & New Zealand

Melbourne. Invited speaker

- 4th International Conference

on Bone Involvement in Arthritis.

Santa Margherita Ligure, Italy.

Australian and New Zealand

Bone and Mineral Society

Annual Scientific Meeting,

Molecules to Man Seminar

- Bernard O'Brien Institute of

Microsurgery Seminar Series.

Series. Invited speaker

AMGEN Bone Academy

- American Society for Bone

Canada. Plenary poster

and Mineral Research Annual

Scientific Meeting, Montreal,

- Australian and New Zealand

Bone and Mineral Society

Annual Scientific Meeting.

Stem Cell Regulation

The Children's Hospital at

Westmead. Sydney. Invited

61

Melbourne. Poster presentation

Meeting, Melbourne.

Melbourne. Poster presentation

St Vincent's Hospital Melbourne

Bone & Mineral Society,

Invited speaker

Hasnawati Saleh

Natalie Sims

Invited seminar

Invited speaker

presentation

Emma Walker

Maria Askmyr

seminar speaker

Exchange) meeting:

Presentations

Louise Purton

- Fred Hutchinson Cancer Research Centre, Seattle, USA. Invited seminar speaker
- Hanson Institute, Adelaide. Invited seminar speaker
- 18th Annual Meeting of the Australian and New Zealand Bone and Mineral Society, Melbourne. Invited speaker

Carl Walkley

- Fred Hutchinson Cancer Research Centre, Seattle, USA. Invited seminar speaker
- Australian Cell Cycle Workshop, Melbourne. Speaker
- Australian Health & Medical Research Congress, Bone and Joint Symposium, Brisbane. Invited speaker
- Leukemia & Lymphoma Society Stohlman Scholar Symposium, Kansas City, USA. Invited speaker
- Sansom Institute, University of South Australia, Adelaide. Invited seminar speaker
- Peter MacCallum Cancer Centre, Melbourne. Invited seminar speaker
- 18th Annual Meeting of the Australian and New Zealand Bone and Mineral Society, Melbourne. Speaker
- International Society of Experimental Hematology (ISEH) 2008. Boston, USA. Plenary Session: Hematopoietic Niche. Invited speaker
- NuRx Pharmaceuticals Inc, Irvine, USA. Invited speaker
- SVI/Department of Medicine at St Vincent's Hospital, University of Melbourne, Melbourne. Invited seminar speaker
- International Bone & Mineral Society Davos Workshops: Bone Biology & Therapeutics, Davos Switzerland. Invited speaker
- Technical University of Munich, Munich, Germany. Invited seminar speaker

Cell Cycle and Cancer

Boris Sarcevic

- The 5th international conference on ubiquitin, ubiquitin-like proteins and cancer, Houston, Texas, USA. Speaker
- Indian Society of Molecular Biology Annual Conference, Mumbai, India. Invited speaker

Randy Suryadinata

- Australian Cell Cycle Workshop,

University of Melbourne, Speaker

Molecular Genetics Jörg Heierhorst

- FASEB Summer Research Conference: Yeast Chromosome Structure, Replication & Segregation, Carefree, Arizona, USA. Speaker.
- 4th Australian Telomere Workshop, Sydney. Speaker
- 10th Australian Cell Cycle
- Workshop, Melbourne. Speaker - Children's Medical Research Institute, Westmead. Seminar speaker

- University of California, Davis, USA. Seminar speaker
- University of Waterloo, Canada. Seminar speaker

Andrew Hammet

- 10th Australian Cell Cycle Workshop, Melbourne. Speaker

Ana Traven

- 10th Australian Cell Cycle Workshop, Melbourne. Speaker
 SVI of Medical Research.
- Seminar speaker

Cytoskeleton and Cancer

Ora Bernard

- Gordon Conference on Phosphorylation and G-Proteins mediate signalling networks, University of New-England. Speaker
- ComBio, Canberra, Session chair and invited speaker
 The Wiezmann Institute of Science. Invited speaker
- VBCRC Invasion and Metastasis

Erik Thompson

- 7th Annual AACR Conference on Frontiers in Cancer Prevention Research. Invited speaker
- 4th International PacRim Breast and Prostate Cancer Meeting, Whistler Blackcomb Resort, British Columbia, Canada. Session co-chair and invited discussant
- Joint MRS-AACR Conference on Metastasis. Vancouver, BC, Canada. Invited speaker and session chair
- Cold Spring Harbor Symposium on Epithelial Mesenchymal Transitions, Invited speaker
- US-DOD Era of Hope Conference, Baltimore, USA. Speaker
- Lombardi Cancer Center, Georgetown University, USA. Institute seminar
- National Breast Cancer Foundation/Prostate Cancer Foundation of Australia Annual Research Update, WEHI, Melbourne. Invited speaker - Matrix Biology Society of
- Australia and NZ, Ettalong Beach, NSW. Speaker - Baker Medical Research
- Institute, Melbourne. Seminar speaker
- Research in Progress Seminars. University of Melbourne/St Vincent's Hospital, Melbourne. Seminar speaker
- Griffith Institute for Health and Medical Research, Griffith University, Brisbane. Seminar speaker
- Department of Pharmacy, University of Queensland,
- Brisbane. Seminar speaker

Pharmacogenomics

Mark Waltham

- 2020 Public Forum 'Biotechnology', Hobart. Invited speaker
- Cancer Pharmacogenomics Conference, Manipal, India. Invited speaker

NRL

Wayne Dimech

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 International Society for Blood Transfusion, Macao, China. Invited speaker

Thu-Anh Pham

International Society for Blood Transfusion, Hanoi, Vietnam. Invited speaker

Publications

Albiston AL, Morton CJ, Ng HL, Pham V, Yeatman HR, Ye S, Fernando RN, De Bundel D, Ascher DB, Mendelsohn FA, Parker MW, and Chai SY. 2008. Identification and characterization of a new cognitive enhancer based on inhibition of insulinregulated aminopeptidase. FASEB J 22:4209-4217

Allan EH, Hausler KD, Wei T, Gooi JH, Quinn JM, Crimeen-Irwin B, Pompolo S, Sims NA, Gillespie MT, Onyia JE, and Martin TJ. 2008. EphrinB2 regulation by PTH and PTHrP revealed by molecular profiling in differentiating osteoblasts. J Bone Miner Res 23:1170-1181

Anderson KA, Ribar TJ, Lin F, Noeldner PK, Green MF, Muehlbauer MJ, Witters LA, Kemp BE, and Means AR. 2008. Hypothalamic CaMKK2 contributes to the regulation of energy balance. Cell Metab 7:377-388

Androulakis S, Schmidberger J, Bate MA, DeGori R, Beitz A, Keong C, Cameron B, McGowan S, Porter CJ, Harrison A, Hunter J, Martin JL, Kobe B, Dobson RC, Parker MW, Whisstock JC, Gray J, Treloar A, Groenewegen D, Dickson N, and Buckle AM. 2008. Federated repositories of X-ray diffraction images. Acta Crystallogr D Biol Crystallogr D64:810-814

Angstetra E, Graham KL, Emmett S, Dudek NL, Darwiche R, Ayala-Perez R, Allison J, Santamaria P, Kay TW, and Thomas HE. 2008. In vivo effects of cytokines on pancreatic beta-cells in models of type I diabetes dependent on CD4(+) T lymphocytes. Immunol Cell Biol

Azizi M, Emanueli C, Peyrard S, Maddedu P, Alhenc-Gelas F, and Campbell DJ. 2008. Genetic and dietary control of plasma tissue kallikrein secretion and urinary kinins exretion in man. J Hypertens 26:714-720 Blick T, Widodo E, Hugo H, Waltham M, Lenburg ME, Neve RM, and Thompson EW. 2008. Epithelial mesenchymal transition traits in human breast cancer cell lines. Clin Exp Metastasis 25:629-642

Burgess BR, Dobson RC, Bailey MF, Atkinson SC, Griffin MD, Jameson GB, Parker MW, Gerrard JA, and Perugini MA. 2008. Structure and evolution of a novel dimeric enzyme from a clinically important bacterial pathogen. J Biol Chem 283:27598-27603

Burgess BR, Dobson RC, Dogovski C, Jameson GB, Parker MW, and Perugini MA. 2008. Purification, crystallization and preliminary X-ray diffraction studies to near-atomic resolution of dihydrodipicolinate synthase from methicillin-resistant Staphylococcus aureus. Acta Crystallogr Sect F Struct Biol Cryst Commun 64:659-661 Campbell DJ. 2008. Critical review of prorenin and (pro)renin receptor research. Hypertension 51:1259-1264 Campbell DJ. 2008. Can measurement of B-type natriuretic peptide levels improve cardiovascular disease prevention? Clin Exp Pharmacol Physiol 35:442-446 Campbell DJ. 2008. Interpretation of plasma renin concentration

in patients receiving aliskiren therapy. Hypertension 51:15-18 Campbell DJ. 2008. Can the study of female rats help our understanding of women? Hypertension 52:e142; author reply e143-144 Campbell DJ. 2008. Why do men

and women differ in their risk of myocardial infarction? Eur Heart J 29:835-836

Campbell PD, Estella E, Dudek NL, Jhala G, Thomas HE, Kay TW, and Mannering SI. 2008. Cytotoxic T-lymphocyte-mediated killing of human pancreatic islet cells in vitro. Hum Immunol 69:543-551 Chai SY, Yeatman HR, Parker MW, Ascher DB, Thompson PE, Mulvey HT, and Albiston AL. 2008. Development of cognitive enhancers based on inhibition of insulin-regulated aminopeptidase. BMC Neurosci 9 Suppl 2:S14 Chan AC, Smeets MF, and Izon DJ. 2008. An in vivo functional genetic screen for suppressors of the Rag1-/- T-cell defect. Mol Immunol 45:682-689 Chung J, Nguyen AK, Henstridge DC, Holmes AG, Chan MH, Mesa JL, Lancaster GI, Southgate RJ, Bruce CR, Duffy SJ, Horvath I, Mestril R, Watt MJ, Hooper PL, Kingwell BA, Vigh L, Hevener A, and Febbraio MA. 2008. HSP72 protects against obesity-induced insulin resistance. Proc Natl Acad Sci U S A 105:1739-1744 Croom HA, Izon DJ, Chong MM, Curtis DJ, Roberts AW, Kay TW. Hilton DJ, Alexander WS, and Starr R. 2008. Perturbed thymopoiesis in vitro in the absence of suppressor of cytokine

signalling 1 and 3. Mol Immunol 45:2888-2896 Crowe S, Turpin SM, Ke F, Kemp BE, and Watt MJ. 2008. Metabolic remodeling in adipocytes promotes ciliary

neurotrophic factor-mediated fat loss in obesity. Endocrinology 149:2546-2556

De Rose R, Fernandez CS, Smith MZ, Batten CJ, Alcantara S, Peut V, Rollman E, Loh L, Mason RD, Wilson K, Law MG, Handley AJ, and Kent SJ. 2008. Control of viremia and prevention of AIDS following immunotherapy of SIV-infected macaques with peptide-pulsed blood. PLoS Pathog 4:e1000055 Dimech W. Panagiotopoulos L. Francis B. Laven N. Marler J. Dickeson D, Panayotou T, Wilson K, Wootten R, and Dax EM. 2008. Evaluation of eight anti-rubella virus immunoglobulin g immunoassays that report results in international units per milliliter. J Clin Microbiol 46:1955-1960 Dixon B, Campbell DJ, and Santamaria JD. 2008. Elevated pulmonary dead space and coagulation abnormalities suggest lung microvascular thrombosis in patients undergoing cardiac surgery. Intensive Care Med 34:1216-1223

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Dixon B, Santamaria JD, and Campbell DJ. 2008. A phase 1 trial of nebulised heparin in acute lung injury. Crit Care 12:R64 Dobson RC, Atkinson SC, Gorman MA, Newman JM, Parker MW, and Perugini MA. 2008. The purification, crystallization and preliminary X-ray diffraction analysis of dihydrodipicolinate synthase from Clostridium botulinum. Acta Crystallogr Sect F Struct Biol Cryst Commun 64:206-208

Dyer WB, Zaunders JJ, Yuan FF, Wang B, Learmont JC, Geczy AF, Saksena NK, McPhee DA, Gorry PR. and Sullivan JS 2008. Mechanisms of HIV nonprogression; robust and sustained CD4+ T-cell proliferative responses to p24 antigen correlate with control of viraemia and lack of disease progression after longterm transfusion-acquired HIV-1 infection. Retrovirology 5:112 Dzamko N, Schertzer JD, Ryall JG, Steel R, Macaulay SL, Wee S, Chen ZP, Michell BJ, Oakhill JS, Watt MJ, Jorgensen SB, Lynch GS, Kemp BE, and Steinberg GR. 2008. AMPK-independent pathways regulate skeletal muscle fatty acid oxidation. J Physiol 586:5819-5831 Fuchs S, Xiao HD, Hubert C Michaud A, Campbell DJ, Adams

JW, Capecchi MR, Corvol P, and Bernstein KE. 2008. Angiotensinconverting enzyme C-terminal catalytic domain is the main site of angiotensin I cleavage in vivo. Hypertension 51:267-274

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Dr Bronwyn Hegarty

Diabetes & Obesity Program Garvan Institute of Medical Research "Adiponectin – the long and short of its effects on hepatic glucose metabolism"

Dr David Nicolic-Patterson

Department of Nephrology, Monash Medical Centre "JNK signalling in acute and chronic tissue damage"

Dr Carl Walkley

"Stem cells to anaemia"

Dr Peter E Czabotar

The Walter and Eliza Hall Institute "Structural studies of the Bcl-2 family of proteins"

A/Prof Jean-Pierre Levesque

Mater Medical Research Institute "Bahaviour of haematopoietic stem cells is governed by their niches"

Prof James Whisstock

Department of Biochemistry & Molecular Biology, Monash University "Structural studies on membrane attack complex/Perforin-like

attack complex/Perforin-like proteins"

Dr Nicky Konstantopolous

Metabolic Research Unit Deakin University "Transcription-based identification of insulin resistance subtypes"

Dr Rajan Sankaranarayanan

Structural Biology Laboratory, Centre for Cellular & Molecular Biology, Hyderabad, India "Structural basis of proofreading/ editing mechanism during translation of the genetic code"

Prof Martin Lavin

Queensland Institute of Medical Research "A central role for ATM in the DNA damage response"

Dr Craig Morton SVI

"You don't have to be pretty to do modelling"

Dr Gregory Hannigan

Centre for Cancer Research, Monash Institute of Medical Research "Integrin linked kinase: What it is and what does it do"

Dr Duncan Campbell SVI

"Angiotensin and bradykinin"

Dr Ana Traven

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Head of Endocrinology Department of Medicine (Royal Melbourne Hospital/

Western Hospital) "Vitamin D and calcium – benefits and risks on bone and beyond"

Dr Martin Sadowski

"Mechanisms of ubiquitination in the control of proteolysis, cell cycle progression and cancer"

Dr Chris Jolly

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New York University School of Medicine, Skirball Institute of Biomolecular Medicine, New York USA "Gene regulation during T lymphocyte differentiation: the expected and unexpected lavers of complexity"

A/Prof Maria Kavallaris

Head, Pharmacoproteomics Program, Children's Cancer Institute Australia for Medical Research "Targeting the cytoskeleton in cancer"

Dr Ian Trounce

Research Group Leader Mitochondrial Stress Department of Medicine/Clinical Neurosciences St Vincent's Hospital, Centre for Eye Research "Modelling mitochondrial dysfunction in age-related neurodegeneration"

David Ascher

Final PhD Seminar – SVI "Structural studies of proteins involved in memory"

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Molecular Physiology Group, Section of Human Physiology Department of Exercise & Sport Sciences, University of Copenhagen, Denmark "Muscle specific deletion of SOCS3 protects against obesity induced insulin resistance"

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Immunology Research Centre St Vincent's Hospital "Overcoming the complement and coagulation barriers in xenotranspantation"

Dr Neil Saunders

School of Molecular and Microbial Sciences, University of Old "Protein kinases and their substrates: prediction, analysis and informatics challenges"

Prof Sharad Kumar

Division of Haematology, Hanson Institute, Institute of Medical & Veterinary Sciences, Adelaide "Regulation of protein function by ubiquitination: Role of the Nedd4 family of ubiquitin ligases"

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Final PhD Seminar, SVI "Calcitonin attenuates the anabolic effect of PTH in vivo and rapidly upregulates sclerostin expression"

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School of Exercise & Nutrition Science, Deakin University "Molecular regulation of skeletal muscle function by nutrients: Significance in ageing" "Genetic strategies to improve mouse islet graft function"

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SVI is an independent medical research institute conducting medical research into the cause, prevention and treatment of diseases that are common and have serious effects on health.

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- Infectious diseases such as hepatitis and AIDS
- Alzheimer's and other neurological disorders

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David Prior, BMedSc(Hons) MBBS(Hons) PhD FRACP DDU FCSANZ; Cardiologist, St Vincent's Health; Senior Lecturer, University of Melbourne; Clinical Research Fellow, SVI

Senior Principal Research Associates

Peter Choong, MBBS MD Melb FRACS FAORTHA; Professor of Orthopaedics, St Vincent's Hospital and The University of Melbourne

Anthony d'Apice, MBBS MD Syd MRACP FRACP FRCPA; Professor/ Director of Clinical Immunology and the Immunology Research Centre, St Vincent's Hospital and The University of Melbourne Kong Wah Ng, MBBS (Hons) Mon MD Melb FRACP FRCP Edin; Associate Professor (Medicine), The University of Melbourne

Principal Research Associates

Michael Henderson, MBBS FRACS, Associate Professor (Surgery), St Vincent's Hospital and The University of Melbourne John Slavin, MBBS FRACPA; Department of Pathology, St Vincent's Hospital

Darren Kelly, PhD, Department of Medicine, St Vincent's Hospital and The University of Melbourne Craig Morton, BSc(Hons) PhD Melb; Principal Research Scientist, Biota Holdings Limited; Senior Lecturer (Biochemistry and Molecular Biology), Monash University

Senior Associates

Harshal Nandurkar, MBBS Bombay PhD Melb FRACP FRCPA; Staff Haematologist, St Vincent's Hospital

Evange Romas, MBBS PhD Melb Senior Lecturer (Medicine), The University of Melbourne Matthew Watt, BAppSci(Hons) PhD Deakin, Monash University

Associates

Julian Adams, BSc MSc Cantab PhD Massey

Sue Rogers, BSc(Hons) PhD Lond; Department of Medicine, The University of Melbourne Jerome Wielens, BAppSci(Hons) PhD Monash

Chief Executive Officer, SVI Foundation

Robin Berry, BAgr Sci Melb MEc UNE

Commercialisation Development Manager Anthony Mason, PhD ANU

Business Manager And Company Secretary

David Rees, BBus RMIT CPA ACIS Grad Dip CSP

Laboratory and Technical Services Manager David Murfitt, HNC AppBiol Cambridge CAT

Research and Administration

Manager Anne Thorburn, BSc(Hons) PhD Syd

Grants Officer Anne Johnston, BSc(Hons) PhD Melb

Development Manager Clare Lacey

Communications Manager Jo Crowston, BA(Hons) Sussex

Human Resources Manager Elizabeth Owen, MHRM Mon, B

Bus Systems Mon (until 04/08) Helen Ritchie, BA SA Dip Bus Melb (from 06/08)

Payroll Adminstrator Bonny LaVelle

Accounting Staff Jing Zhang AdvDipAccRMIT

Administrative Assistants

Steven Boz Beth Castles Leonie Loveday (until 03/08) Julie Malyon (from 05/08) Kathryn O'Connell Dimitra Samaras

IT Manager

Peter Tonoli, A/Dip IT Swinburne L IT Support Officers Fr

James Mugg, BA LaT

Christopher Ryan, BSc/BIS Melb Alex Benavides, Dip Marketing Ecuador Brazil, Cert IV Smll Bus Melb (from 04/08)

National Serology Reference Laboratory, Australia

Director

Elizabeth M Dax, AM MB BS Melb PhD Mon MD Melb; ARCPA Associate Professor (Microbiology and Immunology), The University of Melbourne

General Manager

Susan Best, MAppSc RMIT MBA Melb

Research Coordinator

Dale McPhee, BSc(Hons) PhD Mon; Associate Professor (Microbiology and Immunology), The University of Melbourne

Ouality Manager Roderick Chappel, BAgrSc PhD Melb MASM

Marketing Manager Wayne Dimech, BAppSc RMIT FAIMS MBA LaT

Scientists

Alicia Arnott, BSc(Hons) Deakin (from 03/08) Thein Thein Aye, MB BS PhD Nihon University Penny Buxton, BSc(Hons) Mon (to 3/08) Chris Chiu, BSc(Hons) Adelaide (from 10/08) Stirling Dick, BSc Tasmania Jodie Dodin, BSc Mon Cathryn Dunkley, BSc Latrobe (from 02/08) Barbara Francis, BSc Melb Grad Dip App Sci (Health Statistics) SUT PhD SUT

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Rosina Gribben, BSc Syd (to 02/08) Marina Karakaltsas, BSc LaT Sally Land, BSc (Hons) Dip Ed Melb

Mark Lanigan, BSc Swinburne (Hons) PhD Melb (from 01/08) Nilukshi Malawa Arachchi, BSc RMIT, Dip Lab Tech Vic Tamara McDonald, BSc LaT Lena Panagiotopoulos, BSc LaT Thu-Anh Pham, BAppSc, MAppSc RMIT

Scott Read, BSc (Hons) Lond (to 03/08)

Kim Richards, BSc (Hons) VU Derya Sahin, Vet Sc Turkey, PhD Ankara Turkey (from 11/08) Kathy Smeh, BSc (Hons) DipEd, BEd MEd Melb Madhu Viapayee, (to 7/08) Robert Vinoya, BSc VU (from 11/08)

Sandy Walker, BSc (Hons) LaT Kim Wilson, BAppSc OIT PhD Melb

Data Management and Website Officer Rosanna Fahmy

Laboratory Assistant Frank Torzillo

Executive Assistant

Linda Tracey, G Cert Bus Admin Swinburne (to 02/08) Alison Parker (from 03/08)

Computer Systems Manager John Tomasov, BSc(Hons) PhD LaT Grad Dip Comp Sc Mon

Office Manager

Louie Opasinov, BSc Dip Ed Melb

Training Coordinator / Records Administrator Helen Hasler

Students

Postgraduate Scholars Doctor of Philosophy Theodora Alexiou, BSc(Hons) Mon Eveline Angstetra, BSc(Hons) Melb Alicia Arnott, BSc(Hons) Deakin David Ascher, BSc(Hons) Old Peter Campbell, BSc(Hons) LaTrobe Ally Chau. BMedPharmBiotech(Hons) South Australia (until 06/08) Vanessa Cheung, BSc(Hons) Mon (until 06/08) Jonathan Gooi, BBiomedSci(Hons) Melb Devika Gunasinghe BDS(Hons) MPhil U Peradeniya Tristan Iseli, BSc(Hons) Melb (until 02/08) Michelle Kouspou, BBiomedSc(Hons) Melb Mark McKenzie, BSc(Hons) Melb Kevin Mittelstaedt, MSc Berlin Lorien Parker, BSc(Hons) Melb

Matthew Pereira, BSc LaTrobe (Hons) Melb Walter Pfister, BSc(Hons) Melb Cletus Pinto, BAppSc QUT Ruby Platt, BSc(Hons) Virginia Julie Quach, BApplSc(Hons) RMIT Nirupa Sachithanandan, MBBS Mon FRACP Hasnawati Saleh, MSc Old

BSc(Hons) Hasanuddin, DipSci Old

Randy Suryadinata, BSc(Hons) Melb

Shanna Tam, BSc(Hons) Melb Miralireza (Farzin) Takyar, MBBS Iran

Sarah Turpin, B App Sci Razan Wafai, BSc(Hons) Vic Kelly Waldeck, BSc(Hons) UWA

Doctor of Science Frances Milat, MBBS Mon FRACP

Master of Science Edwin Widodo, BSc(Hon) Brawijaya

Undergraduate Scholars

Bachelor of Science (Honours) Michelle Ashton Victoria Chan Jonathan Chee Hayley O'Neill Walter Pfister Alice Schofield

Undergraduate Research

Opportunity Program (UROP) Michelle Ashton Luke Bonavia Holly Brennan Seamus Crowe (until 02/08) Shei Foong Kok Jenna Langfield Alisa Sedgifar Di Wu

Undergraduate Students

Bachelor of Science (Third year research placements) Heather Ford Samuel Lewis

Summer Vacation Research Scholars

Amanda Burnside Jia Ni Zhu Ian Luk

SVI committees

Board Committees

SVI Audit and Finance Committee

The purpose of the Audit and Finance Committee is to assist the Board in fulfilling its responsibilities in relation to the identification of areas of significant financial risks and the monitoring of:

- adherence to the Company's Statement of Corporate Governance Principles
- maintenance of an effective and efficient internal and external audit
- management and external reporting
- effective management of financials
- compliance with laws and regulations
- business dealings, in particular related party transactions

The Committee also undertakes the role of an audit committee and provides recommendations to the Board on the appointment of the external auditors, direction of audit (without impacting on the auditor's independence) and the level of audit fees.

2008 Committee members (external):

Ruth O'Shannassy (chair), Paul Holyoake, Janene Krongold and Michael McGinniss

2008 Committee members (internal):

Thomas Kay and David Rees

SVI Commercialisation and Intellectual Property Committee

The purpose of the Commercialisation and Intellectual Property Committee (CIP) is to ensure processes are in place for protection and commercialisation of the intellectual property assets of SVI.

In 2008, the CIP Committee oversaw SVI's participation in the Cooperative Research Centre for Cancer Therapeutics (CRC-CT). The CRC-CT, which involves many other significant Australian research institutions, was set up to commercialise basic cancer research. SVI is the core Structural Biology Group of the CRC-CT. Members of the Committee also reviewed SVI's Collaboration Research Agreements with both academic and industrial partners.

2008 Committee members (external):

John Sime (Chair), Barry Jackson, Michael McGinniss, Paula de Bruyn, Michelle Baker, Greg Robinson and Andrew Baker

2008 Committee members (internal):

Thomas Kay, Michael Parker, Tony Mason (Convenor)

Internal Committees

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SVI Occupational Health and Safety Committee

The Occupational Health and Safety Committee (OH&S) meets on a fortnightly basis to deal with various health and safety operational issues at the Institute and devise policy in line with legislative and regulatory requirements.

In 2008 the activities of the Committee focused on a revision of SVI OH&S based on the results from the Independent Safety Audit reported in February 2008. In addition to the policy aspects of OH&S, the team work on practical implementation throughout the Institute. Chemical management now includes the team's involvement at point of purchase, and the storage, use and the eventual disposal of chemicals. Where possible, safer alternatives are investigated and encouraged. SVI OH&S policy must comply with the regulatory and legislative requirements, but must also evolve to keep pace with the developments in SVI research.

2008 Committee members:

Ginny Leopold (Chair), David Murfitt, Helen Ritchie, Frosa Katsis, Thomas Loudovaris, Narelle McGregor, Kevin Mittelstaedt

SVI Equipment Committee

The SVI Equipment Committee meets monthly to coordinate equipment requirements throughout the Institute and to provide strategic advice to the Director.

The Committee aims to make effective use of scientific equipment and technologies by encouraging researchers to share resources. It administers the annual NHMRC Equipment Grant and also accepts specific, communal and non-communal equipment proposals for consideration according to guidelines. The Committee made a total of 12 applications to various philanthropic trusts and obtained funds to the value of \$122,680 from five successful applications. Orders placed in 2008 included the following major purchases: Jasco Model J815 Spectropolarimeter, Sysmex KK-21N Haematological Analyser and Leica CM3050 crvostat.

2008 Committee members: Michael Parker (Chair), David Murfitt, David Rees, Natalie Sims, Gregory Steinberg

SVI Website Committee

The aim of the SVI Website Committee is ensure that the Institute has the most effective website possible.

The Committee reviews the current website and coordinates updates. The main focus in 2008 was to initiate design of a new website for the Institute. This has involved creating a detailed brief for the new site and interviewing web design companies, who will tender for the job in 2009.

2008 Committee members: Jo Crowston (Chair), Anne

Johnston, James Mugg, Natalie Sims

Income











Financial snapshot 2008

Expenditure







Directors' Report

Your Directors present their report on the company for the financial year ended 31 December 2008.

1. Directors

The names of Directors in office at any time during or since the end of the year are:Dr Susan M Alberti AO HOA LLDMr Jeffrey N CliftonMr Paul HolyoakeProf Thomas WH KayProf Jim McCluskey (from 28/7/08)Mr John MacFarlane (from 28/7/08)Mr Michael McGinnissMs Ruth A O'ShannassyMr G John PizzeyMr Gregory J RobinsonMs Brenda M ShanahanMr Douglas A Wright

Directors listed above have been in office since the start of the financial year to the date of this report unless otherwise stated.

Ms Nicole Feely, Mr Barry Jackson, Professor James Best and Prof James Angus resigned from the board during 2008.

2. Company Secretary

The following person held the position of company secretary at the end of the financial year: Mr David R Rees – Bachelor of Business, Graduate Diploma Company Secretarial Practice, Certified Practicing Accountant, Chartered Secretary. Mr Rees has worked for St Vincent's Institute of Medical Research for 10 years, performing management roles. Mr Rees was appointed company secretary on 1 January 2004.

3. Principal Activity

The principal activity of the company during the financial year was medical research. There was no significant change in the nature of the company's principal activity during the financial year.

4. Operating Results

The operating surplus of the company amounted to \$794,083. The surplus is reinvested in the company.

5. Dividends

In accordance with the company's constitution no dividends are paid.

6. Review of Operations

St Vincent's Institute (SVI) carries out biomedical research into common diseases of the community, including diabetes (type 1 and type 2), obesity, cardiovascular disease, bone diseases including arthritis and osteoporosis, cancer, Alzheimer's disease, and virology.

During 2008, the Institute recruited several dedicated and high achieving researchers in the area of cancer and diabetes. SVI has already benefited from their presence through additional research grants and the creation of a network of internal and external collaborations that will generate a high level of research activity and exchange of ideas. SVI has maintained a consistently high level of research performance and is aiming to build on this with further selective recruitment in 2009. A particular achievement was our success rate in NHMRC grants of close to twice the national average.

The 2008 surplus of \$794,083 is slightly down on the 2007 surplus of \$962,858, however the main contributing factor for this is the inclusion of an unrealised share loss (shares that have not been sold) as an expense in the Income and Expenditure Statement. SVI, like many other organizations with investment portfolios, has suffered during the share market downturn. However SVI's share portfolio (\$1,677,597) represents only 13% of our total funds available for investment. The remaining 87% of funds are in cash deposits and short-term interest bearing investments. SVI has no borrowings.

Research related income represents 81% of total revenue. The competitive grant component that covers government, non-government and overseas funding sources is 63% and infrastructure support is 15% and industry 3%. Research grant income (net of fund transfers to our collaborators) grew by 23%, mainly through our partnership in a government sponsored Cooperative Research Centre and additional peer reviewed research awards.

In 2008 non-research operating income decreased by \$359,723 (9%), which was mainly due to the reduction in legacies, bequests and donations income. The previous year comparison should be viewed in the context that 2007 was a very successful fund raising year. Fund raising can be very unpredictable and it was difficult to match some of the large donations of last year. It also underlines the difficulty of planning future research activities around the optimism that fund raising programs will finance a project.

St Vincent's Institute Of Medical Research ABN 52 004 705 640, Concise Financial Report For The Year Ended 31 December 2008

Directors' Report

Expenditure in both research and non-research activities has grown 15% and 14% respectively. The similar increase in expenditure is not surprising as administration services and facilities have to keep pace with the research groups' needs. There is little free capacity in administration thus expenditure in this area grows in parallel with research activities.

SVI allocated \$489,601 to purchase new equipment in 2008, well down on last year's figure of \$1,757,165. There is a direct correlation between the funds raised from non-research sources and the spending on equipment. The Institute is heavily reliant on funding from philanthropic foundations and other donations for the purchase of equipment. In 2008, the legacies, bequests and donations contribution decreased by \$499,779. Peer review granting bodies rarely provide significant funds for equipment so there is an ongoing need to raise funds. The SVI Foundation plays a major role in fundraising through organising events and developing relationships and networks with industry, philanthropic foundations and individuals. Their work helps bridge the gap between grant income and the full direct costs of research.

The Victorian and Commonwealth Governments provided \$2,882,638 in infrastructure funding, which covered 48% of our infrastructure expenditure commitment, the balance coming from other sources eg. interest and dividends. The government infrastructure support funding is derived by applying formulae to the Institute's competitive grant income and in this way making the funding allocations based on performance. The government's policy of linking infrastructure support to research activity is also important because it provides some opportunity for Institutes to keep pace with the growing cost of providing support and services to the research projects. The funds are used in accordance with government guidelines for "indirect" costs of carrying out research such as administration, laboratory services, building operations and commercial development. A decrease in infrastructure support, for example as a result of capping Government infrastructure spending in the context of growth in competitive grants, would be a significant problem for SVI.

The SVI Foundation has made an excellent financial contribution this year through its fundraising efforts, raising \$1.2 million this year.

In 2008 the number of staff and students was 130 (2007 - 133). In addition SVI is the host institute for the National Serology Reference Laboratory (NSRL), providing administration and research support to the 31 NSRL staff.

7. Significant changes in state of affairs

No significant changes in the state of affairs of the company occurred during the financial year.

8. After balance date events

No matters or circumstances have arisen since the end of the financial year which significantly affected or may significantly affect the operations of the company, the results of those operations, or the state of affairs of the company in future financial years.

9. Future developments, prospects and business strategies

The Institute is aiming, with St Vincent's Health Melbourne and other campus research institutes, to establish The Aikenhead Centre for Medical Discovery using a model of integrated medical research and clinical care. The Centre will bring together tissue engineering, bionic technology and material sciences in a clinical environment to focus on regenerative and restorative medicine. The Institute and its partners are looking to redevelop the St Vincent's site at the corner of Victoria Pde and Nicholson St Fitzroy, Melbourne and is currently making representations to government. The timing for this project is 2014/15.

10. Environmental issues

The company operates predominantly within the medical research sector and is committed to conducting its business activities with respect for the environment while continuing to meet expectations of members, employees, customers and suppliers. During the period from 1 January 2008 to the date of this report, this company has complied with the requirements of the Environmental Protection Act.

11. Options

No options over issued shares or interests in the company were granted during or since the end of the financial year and there were no options outstanding at the date of this report.

Directors' Report

12. Meetings of directors

During the financial year, 12 meetings of directors (including committees) were held. Attendees were:

	Directors' Meetings		Committee Meetings			
			Commercialisation		Audit & Finance)
	Number eligible to attend	Number attended	Number eligible to attend	Number attended	Number eligible to attend	Number attended
Alberti, SM	5	2	-	-	-	-
Clifton, JN	5	4	-	-	-	-
Feely, NM/delegate – R Fox	5	5	-	-	-	-
Holyoake, P	5	4	-	-	4	4
Kay, TWH	5	5	1	1	6	6
McCluskey, J	5	1	-	-	-	-
MacFarlane, JT	5	2	-	-	-	-
McGinniss, M	5	5	1	1	6	5
O'Shannassy, RA	5	4	-	-	6	5
Pizzey, GJ	5	4	-	-	-	-
Robinson, GJ	5	4	1	-	-	-
Shanahan, BM	5	5	-	-	-	-
Wright, DA	5	4	-	-	-	-

13. Directors' and auditors' indemnification

The company has not, during or since the financial year, in respect of any person who is or has been an officer or auditor of the company or a related body corporate:

- indemnified or made any relevant agreement for indemnifying against a liability incurred as an officer, including costs and expenses in successfully defending legal proceedings;

- paid or agreed to pay a premium in respect of a contract insuring against a liability incurred as an officer for the costs or expenses to defend legal proceedings; with the exception of the following matters.

During or since the financial year the company has paid premiums to insure each of the directors against liabilities for costs and expenses incurred by them in defending any legal proceedings arising out of their conduct while acting in the capacity of director of the company, other than conduct involving a wilful breach of duty in relation to the company.

14. Proceedings on Behalf of Company

No person has applied for leave of Court to bring proceedings on behalf of the company or intervene in any proceedings to which the company is a party for the purpose of taking responsibility on behalf of the company for all or any part of these proceedings.

However legal proceedings are being taken against the National Serology Reference Laboratory (NRL) in relation to a claim for negligence. St Vincent's Institute (SVI) is the NRL's host organisation. SVI, as host organisation, has a contractual agreement with the Commonwealth Government, to provide services to the NRL and allow it to conduct its business through SVI.

The Victoria Managed Insurance Fund, as insurers of the NRL and SVI, has engaged legal council and any financial settlement will be covered by insurance.

St Vincent's Institute Of Medical Research ABN 52 004 705 640, Concise Financial Report For The Year Ended 31 December 2008

Directors' Report

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15. Auditor's Independence Declaration

The lead auditor's independence declaration for the year ended 31 December 2008 has been received and can be found on page 76 of the financial statements.

Signed in accordance with a resolution of the Board of Directors.

Bunda M. Shonahan

R.058

Director BM Shanahan

Director RA O'Shannassy

Dated this 23rd day of March 2009, Melbourne, Australia



AUDITOR'S INDEPENDENCE DECLARATION UNDER SECTION 307C OF THE CORPORATIONS ACT 2001 TO THE DIRECTORS OF ST VINCENT'S INSTITUTE OF MEDICAL RESEARCH

I declare that, to the best of my knowledge and belief, during the year ended 31 December 2008 there have been:

- no contraventions of the auditor independence requirements as set out in the Corporations Act 2001 in relation to the audit; and
- (ii) no contraventions of any applicable code of professional conduct in relation to the audit.

WEBB AUDIT PTY LTD

Director

Dated: Melbourne: 23 March 2009

Webb Audit Pty Ltd ABN 59 116 151 136 A member of the Webb Group Onr Toorak & Aubum Roads Hawthorn East Vic 3123 Australia PO Box 185 Toorak Vic 3142 Australia Telephone +61 3 9822 8686 Facsimile +61 3 9824 8578 audit@webbgroup.com.au Liability Limited by a scheme approved under Professional Standards Legislation

St Vincent's Institute Of Medical Research ABN 52 004 705 640, Concise Financial Report For The Year Ended 31 December 2008

Discussion and analysis of the Financial Statements

Information on St. Vincent's Institute of Medical Research Concise Financial Report

The financial statements and disclosures in the concise financial report have been derived from the 2008 Financial Report of St. Vincent's Institute of Medical Research. A copy of the full financial report and auditors report will be sent to any member, free of charge, upon request.

The discussion and analysis is provided to assist members in understanding the concise financial report. The discussion and analysis is based on the company's financial statements and the information contained in the concise financial report has been derived from the full 2008 Financial Report of St. Vincent's Institute of Medical Research.

Income Statement

The 2008 net surplus was \$794,083, which is a strong result considering direct research expenditure on consumables increased by \$675,913 and employee benefits by \$1,000,990. These costs were fully offset by an increase in grant income of \$2,809,713, in particular research grant income increased by \$2,328,048.

In 2008, the total income was \$19,058,695 and the key sources were 68% from government grants, of which 53% was competitive grant funding and 15% infrastructure support. Non-government research grants were 12%, Legacies, Bequests and Donations 10% and interest/dividends 5% and other sources 5% of total income. The total expenditure was \$18,264,612 and the components were direct research expenses of 66%, laboratory and building support services (including depreciation) 14%, administration 7%, SVI Foundation 3%, commercialisation support 2%, external transfers to collaborators 4% and investment portfolio movements 4%. The share investment unrealised expense for the year was \$381,880, which reflects the decline in the market value of the share portfolio.

Balance Sheet

In 2008 the total Net Assets increased by \$564,017, representing an increase of 3% on 2007. Although this was not a significant change overall, there were however some important changes to the composition of the balance sheet:

- Current Assets increased by \$3,096,891 (33%) to \$12,428,724 and mostly in Cash and Cash Equivalents, which includes term deposits and deposits at call of \$7,786,918 and cash at bank of \$3,425,906. Trades and other receivables make up the balance.

- Total Current Liabilities increased by \$938,659 (31%), mainly due to Grants in Advance, which increased by \$882,458. The Grants in Advance totals \$1,819,734 and is part of the cash held by SVI. These funds are due to be spent in 2009.

- The net value of the property, plant and equipment declined by \$1,370,881, with asset purchases for the year of \$540,967 being offset by the annual depreciation and amortisation of \$1,911,848.

- Financial Assets represents shares listed on the stock exchange and the value has declined in 2008. The market value has decreased by \$611,181 of which \$230,066 is shown as a reduction in the Financial Asset Reserve and \$381,880 as an unrealised loss in the Income Statement. However, an additional injection of funds to the investment account during 2008 has meant that the Financial Assets show an overall a net decrease of \$189,995.

Statement of Changes in Equity

In 2008 the Equity increased by \$564,017 (3%), which was the net result of a surplus from operating activities of \$794,083 and decrease in the financial asset reserve of \$230,066. The decrease in financial asset reserve reflects a fall in the market value of share investments held by SVI.

Cash Flow Statement

In 2008 the net cash position increased by \$3,409,549 (44%), resulting from a surplus in operating activities of \$4,372,467 and an application of funds to investment activities of \$962,918. In contrast to last year, there were less funds spent on investments, in particular plant and equipment, where cash purchases were down by \$1,267,565. Grants Received was significantly higher than 2007 due to a general increase in income and an increase of \$882,458 in the grants in advance was a standout component.

St Vincent's Institute Of Medical Research ABN 52 004 705 640, Concise Financial Report For The Year Ended 31 December 2008

Income Statement for the year ended 31 December 2008

	Note	2008 (\$)	2007 (\$)
Revenue	2	19,058,695	16,248,982
Other Income	2	0	67,709
Consumables used		(3,722,203)	(3,046,290)
Employee benefits expense		(9,742,242)	(8,741,252)
Depreciation and amortisation expense		(1,911,848)	(1,776,084)
Other expenses		(2,888,319)	(1,790,207)
Surplus for the year	3	794,083	962,858

St Vincent's Institute Of Medical Research ABN 52 004 705 640, Concise Financial Report For The Year Ended 31 December 2008

Balance Sheet as at 31 December 2008

	2008 (\$)	2007 (\$)
ASSETS		
Current Assets		
Cash and cash equivalents	11,212,824	7,803,275
Trade and other receivables	1,185,149	1,478,569
Other assets	30,751	49,989
Total Current Assets	12,428,724	9,331,833
Non-current Assets		
Trade and other receivables	250,000	250,000
Financial assets	1,677,597	1,867,592
Property, plant & equipment	9,560,057	10,930,938
Total Non-current Assets	11,487,654	13,048,530
Total Assets	23,916,378	22,380,363
Current Liabilities		
Trade and other payables	813,421	724,199
Short-term provisions	1,110,747	1,143,769
Funds held in trust for NSRL accrued leave	138,280	138,280
Other current liabilities	1,819,734	937,275
Total Current Liabilities	3,882,182	2,943,523
Non-current Liabilities		
Long-term provisions	125,434	92,095
Total Non-current Liabilities	125,434	92,095
Total Liabilities	4,007,616	3,035,618
NET ASSETS	19,908,762	19,344,745
EQUITY		
Retained surplus	19,908,762	19,114,679
Financial asset reserve	-	230,066
TOTAL EQUITY	19,908,762	19,344,745

Statement of Changes in Equity for year ended 31 December 2008

	Retained Surplus \$	Financial Asset Reserve \$	Total \$
Balance at beginning of Financial year 2007	18,151,822	225,067	18,376,889
Revaluation increment	-	4,998	4,998
Surplus for the year	962,858	-	962,858
Balance at end of financial year 2007	19,114,679	230,066	19,344,745

	Retained Surplus \$	Financial Asset Reserve \$	Total \$
Balance at beginning of Financial year 2007	19,114,679	230,066	19,344,745
Revaluation decrement	-	(230,066)	(230,066)
Surplus for the year 2008	794,083	-	794,083
Balance at end of financial year 2008	19,908,762	-	19,908,762

Cash Flow Statement for the year ended 31 December 2008

	2008 Inflows (Outflows) \$	2007 Inflows (Outflows) \$
Cash flow from operating activities		
Grants received	16,595,059	13,500,811
Payments to suppliers and employees	(15,862,107)	(13,436,832)
Donations, legacies and bequests	1,958,005	2,457,784
Other revenue	818,487	324,812
Interest received	756,487	592,661
Dividends received	106,536	259,544
Net cash provided by operating activities	4,372,467	3,698,780
Cash flow from investing activities		
Purchase of plant and equipment	(489,601)	(1,757,166)
Purchase of Motor vehicle	(51,366)	-
Leasehold improvements	-	-
Payments for investments	(421,951)	(365,565)
Net cash (used in) investing activities	(962,918)	(2,122,731)
Net increase/(decrease) in cash held	3,409,549	1,576,049
Cash at the beginning of the year	7,803,275	6,227,226
Cash at the end of the year	11,212,824	7,803,275

St Vincent's Institute Of Medical Research ABN 52 004 705 640, Concise Financial Report For The Year Ended 31 December 2008

Notes to the Financial Statements for the year ended 31 December 2008

Note 1:

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The Concise Financial Report is an extract from the full financial report for the year ended 31 December 2008. The concise financial report has been prepared in accordance with Accounting Standard AASB 1039: Concise Financial Reports and the Corporations Act 2001.

The financial statements, specific disclosures and other information included in the concise financial report are derived from and are consistent with the full financial report of St Vincent's Institute of Medical Research. The concise financial report cannot be expected to provide as detailed an understanding of the financial performance, financial position and financing and investing activities of St Vincent's Institute of Medical Research as the full financial report.

The financial report of St Vincent's Institute of Medical Research complies with all Australian equivalents to International Financial Reporting Standards (AIFRS) in their entirety. The presentation currency used in this concise financial report is Australian dollars.

The accounting policies have been consistently applied by the company and are consistent with those of the previous year unless otherwise stated.

Notes to the Financial Statements for the year ended 31 December 2008

	Note	2008 (\$)	2007 (\$)
Note 2: Revenue			
Operating activities			
Research activities:			
- government grants for direct research	4-5	10,204,254	7,901,206
- other research grants		2,332,288	1,649,663
- government grants for operational support	4-5	2,882,638	2,698,875
		15,419,180	12,249,744
Non-research activities:			
- legacies, bequests, donations		1,958,005	2,457,784
- dividends from other corporations		106,536	259,544
- interest from other corporations		756,487	564,957
- contract services		384,146	535,945
- royalty		205,312	105,353
- other		229,029	75,655
		3,639,515	3,999,238
Total revenue		19,058,695	16,248,982
Non–operating activities			
-realised gain on disposal of shares		-	67,709
Total other income/(loss)		-	67.709

Note 3: Surplus

(a) The following expenditure was incurred in determining the surplus:

Expenses		
Direct research	12,050,836	10,460,132
Operational support	3,110,967	2,718,609
	15,161,803	13,178,741
Transfer of funds to external, joint collaborators	809,081	399,008
Depreciation of non-current assets	1,194,101	1,058,337
Amortisation of non-current assets	717,747	717,747
(b) Significant revenues and expenses:		
Unrealised loss on market value of shares	381,880	0

Notes to the Financial Statements for the year ended 31 December 2008

	2008 (\$)	2007 (\$)
Note 4: Grants – Commonwe	alth Government	
National Health and Medical Research Council:		
- Infrastructure support scheme	1,492,348	1,245,809
- Research grants	6,825,500	5,369,282
Australian Research Council	882,023	902,502
Department of Health and Ageing	1,977,704	1,370,881
Department of Innovation, Industry, Science and Research	319,027	33,541
	11,496,602	8,922,015

Note 5: Grants – Victorian State Government

Department of Innovation, Industry & Regional Development:

	1,590,290	1,678,066
- Other Direct research grants	200,000	225,000
- Operational Infrastructure Support	1,390,290	1,453,066

Note 6: Trade and other receivables

Current		
Grants and reimbursements	1,185,149	1,478,569
Provision for impairment receivables	-	-
	1,185,149	1,478,569
Non-current		
St Vincent's Hospital - Imprest Advance	250,000	250,000

Note 7: Segment Reporting

The company operates in the medical research sector where it undertakes basic and clinical research in Australia.

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St Vincent's Institute Of Medical Research ABN 52 004 705 640, Concise Financial Report For The Year Ended 31 December 2008

Notes to the Financial Statements for the year ended 31 December 2008

DIRECTORS' DECLARATION

The directors of St Vincent's Institute of Medical Research declare that the concise financial report of St Vincent's Institute of Medical Research for the financial year ended 31 December 2008, as set out in pages 72 to 87.

a) complies with Accounting Standard AASB 1039: Concise Financial Reports; and

b) is an extract from the full financial report for the year ended 31 December 2008 and has been derived from and is consistent with the full financial report of St Vincent's Institute of Medical Research

This declaration is made in accordance with a resolution of the Board of Directors.

Burda M. Shonahar

Director BM Shanahan

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R.058

Director RA O'Shannassy

Dated this 23rd day of March 2009, Melbourne, Australia



INDEPENDENT AUDIT REPORT TO THE MEMBERS OF ST VINCENT'S INSTITUTE OF MEDICAL RESEARCH

Report on the Concise Financial Report

The accompanying concise financial report of St Vincent's Institute of Medical Research comprises the balance sheet as at 31 December 2008, the income statement, statement of changes in equity and cash flow statement for the year then ended and related notes, derived from the audited financial report of St Vincent's Institute of Medical Research for the year ended 31 December 2008, and the discussion and analysis. The concise financial report does not contain all the disclosures required by Australian Accounting Standards.

Directors' Responsibility for the Financial Report

The directors of the company are responsible for the preparation and presentation of the concise financial report in accordance with Accounting Standard AASB 1039: Concise Financial Reports (including the Australian Accounting Interpretations), statutory and other requirements. This responsibility includes establishing and maintaining internal control relevant to the preparation of the concise financial report, selecting and applying appropriate accounting policies; and making accounting estimates that are reasonable in the circumstances.

Auditor's Responsibility

Our responsibility is to express an opinion on the concise financial report based on our audit procedures. We conducted an independent audit, of the financial report of St Vincent's Institute of Medical Research for the year ended 31 December 2008. Our audit report on the financial report for the year was signed on 24 March 2009 and was not subject to any modification. The Australian Auditing Standards require that we comply with relevant ethical requirements relating to audit engagements and plan and perform the audit to obtain reasonable assurance whether the financial report for the year is free from material misstatement.

Our procedures in respect of the concise financial report included testing that the information in the concise financial report is derived from, and is consistent with, the financial report for the year, and the examination on a test basis, of evidence supporting the amounts, discussion and analysis, and other disclosures which were not directly derived from the financial report for the year. These procedures have been undertaken to form an opinion whether, in all material respects, the concise financial report complies with Accounting Standard AASB 1039: Concise Financial Reports and whether the discussion and analysis complies with the requirements laid down in AASB 1039: Concise Financial Reports.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Webb Audit Pty Ltd ABN 59 116 151 136 A member of the Wabb Group Cnr Toorak & Auburn Roads Hawthorn East Vic 3123 Australia PO Box 185 Toorak Vic 3142 Australia Telephone +61 3 9822 8686 Facsimile +61 3 9824 8578 audit@webbgroup.com.au Liability Limited by a scheme approved under Professional Standards Legislation



Independence

In conducting our audit, we have complied with the independence requirements of the Corporations Act 2001. We confirm that the independence declaration required by the Corporations Act 2001, provided to the directors of St Vincent's Institute of Medical Research on 23 March 2009, would be in the same terms if provided to the directors as at the date of this auditor's report.

Auditor's Opinion

In our opinion, the concise financial report including the discussion and analysis of St Vincent's Institute of Medical Research for the year ended 31 December 2008 complies with Accounting Standard AASB 1039: Concise Financial Reports.

WEBB AUDIT PTY LTD

AP MARKS Director

Dated: Melbourne 24 March 2009.

Webb Audit Pty Ltd A8N 59 116 151 136 A member of the Webb Group Cnr Toorsk & Auburn Roads Hawthorn East Vic 3123 Australia PO Box 185 Toorak Vic 3142 Australia Telephone +61 3 9822 8686 Facsimile +61 3 9824 8578 audit@webbgroup.com.au Liability Limited by a scheme approved under Professional Standards Legislation

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