



**Medical research:  
Our greatest  
renewable resource.**

**Medical research is one of Australia's greatest renewable resources. Long after the mining boom has come and gone, future generations will be reaping the rewards of the investments that we make today.**



Every year, around 2,000 Australian science graduates embark on a PhD. These students undertake pioneering research over a period of three to four years, supported by dedicated and world-class teams of researchers and support staff.

After their PhD, many of these now well-trained and highly sought-after graduates travel overseas with their newly minted degree in hand, to carry out the first component of their post-PhD training, known as 'the postdoc'.



### **Phd student**

3-4 years of study following a 4 year undergraduate degree.

### **Learning the ropes**

Michelle Ashton is in the third year of her PhD in SVI's Immunology and Diabetes Unit.

While overseas, they are expected to prove themselves by publishing a number of papers in prestigious journals; a difficult feat, considering they also have to embark on a new research theme and adapt to life in a new country.

After this period, and if they have navigated all this successfully, they may choose to return home, bringing with them the skills and expertise garnered in their time abroad.



**Postdoctoral Fellow**

2-3 year stints, usually in one or two different places, often overseas.

**Finding her feet**

Rachelle Johnson started her first postdoc at SVI in 2011 after completing her PhD at Vanderbilt University, Tennessee.

Now, assuming they haven't fallen by the wayside, having been tempted by better and more secure funding in a parallel industry, or decided that other careers are more sympathetic to those with a young family, they will enter a demanding grants' cycle that will continue throughout their careers.



**Leader,  
small research team**

**Making his mark**

Andrew Deans spent 5 years in London at Cancer Research UK before returning to Australia last year.

Sound a bit tedious?

Now imagine that one of these researchers identifies how cancer cells evade the body's defences: a discovery which allows the development of a new drug against breast cancer.

Every three to five years they will have to apply for funding for their research, knowing that the average success rate is dismally low. Assuming they are able to maintain funding for their experiments and staff, they are themselves assessed every 6 years to see if they have performed well enough to be granted a salary, which is, in a chicken and egg fashion, contingent on them being successful gaining funding for their research.



**Head of larger research group**

Responsible for multiple research programs.

**Hitting her stride**

A/Prof Natalie Sims is Head of SVI's Bone Cell Biology and Disease Unit.

**Head of major research Program**

**Blazing a trail**

Prof Michael Parker is one of Australia's outstanding medical researchers.

Or whose studies lead to the development of a drug that enhances cognitive function, allowing people previously affected by dementia to live out their lives sharp-witted, rather than in an intellectual fog.

Those who manage to hurdle the difficulties and approach the end of their careers still enthused about the possibility of discovery and invigorated by the challenges, in turn become a source of great inspiration for a whole new generation of medical researchers.

**Medical research: Australia's greatest renewable resource.**

Or is involved in a program which facilitates transplantation of insulin-producing cells into people with type 1 diabetes, allowing recipients to live independently for the first time in years. This is why medical research continues in this country, not because of the monetary rewards, and certainly not because of job security, but because of a greater promise: improving health and saving lives.

**Emeritus Professor  
Training  
Australia's future**

Prof Jack Martin continues to make an extraordinary contribution to the advancement of knowledge, in his role both as a researcher and as a mentor to his more junior colleagues.



## 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.

## 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.

## Our values

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

## 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.

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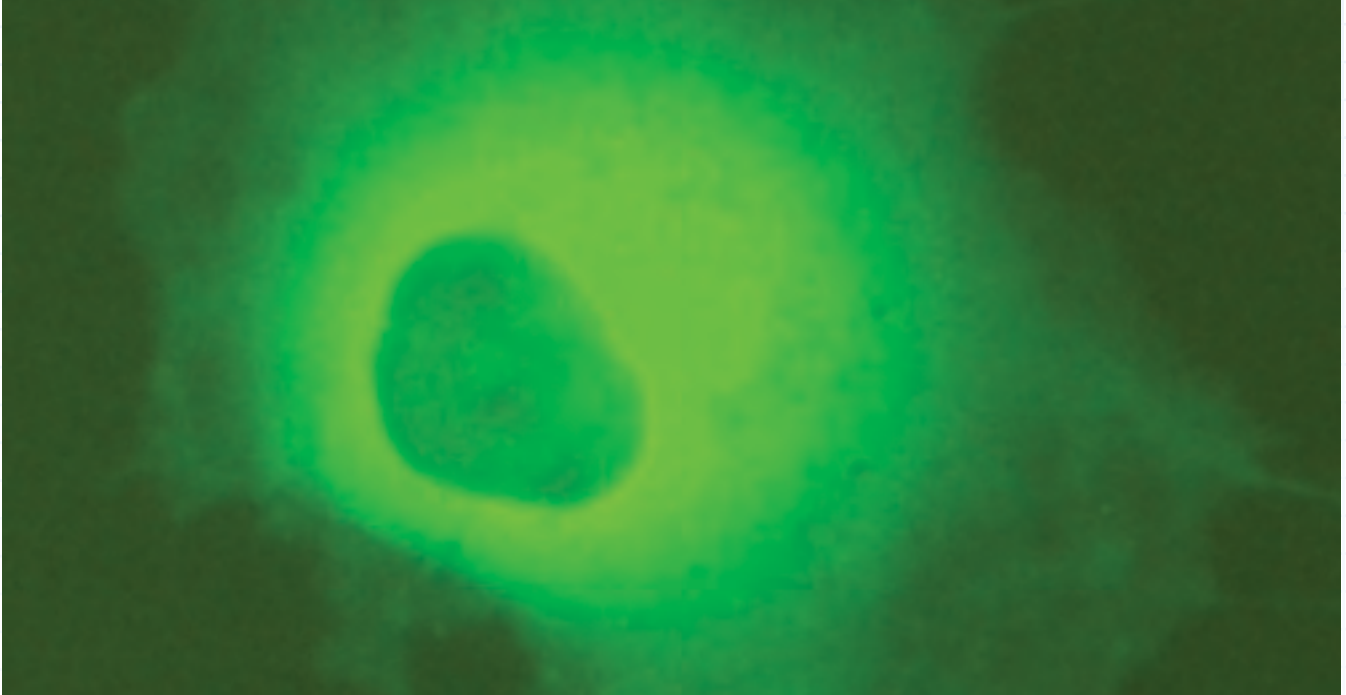
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# Five notable discoveries of 2011

From understanding how the body responds to obesity, to the complex relationship between the blood and bone, 2011 was the year of interactions.

The papers described here were the result of profound curiosity about cellular cause and effect and reflect SVI's deep collaborative spirit.

## The tank is half full



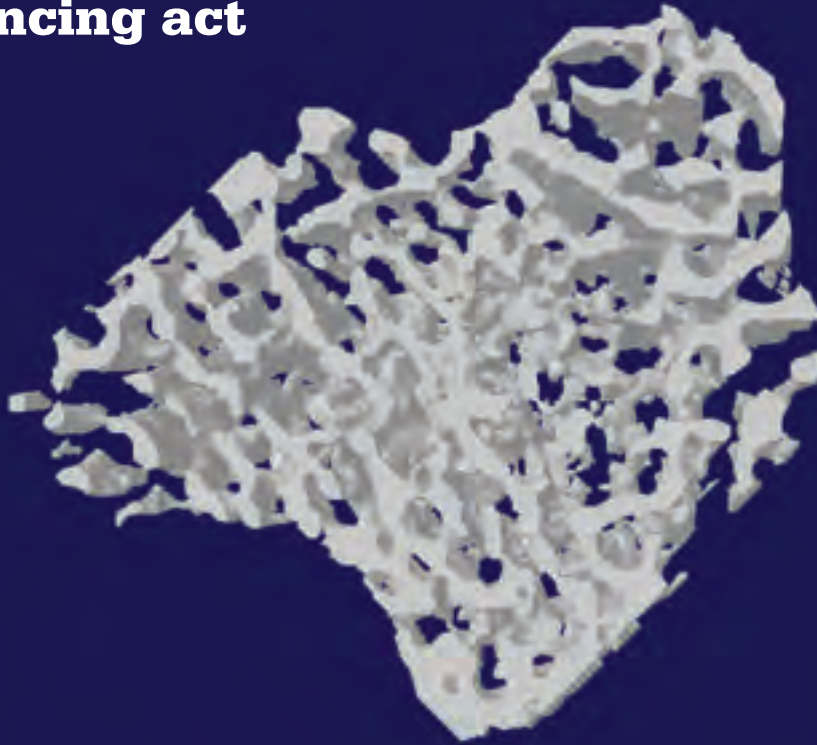
**Dr Jon Oakhill and colleagues turned their field on its head in 2011, with a paper in the prestigious journal Science. Jon's research focuses on the protein AMP activated protein kinase (AMPK): the body's energy gauge.**

**Jon explains, "In the field, it was always believed that the signal for our body's cells to recharge their energy through AMPK occurred only after all the energy had been used up – like thinking that you could only refill your car's petrol when the tank is completely empty. We showed that an intermediate energy breakdown product, called ADP, can also trigger AMPK to become active – a signal for filling up when the tank is only half full, so to speak."**

**This research further uncovers the mechanisms that lie behind the health benefits of exercise and has important implications for the fight against obesity.**



## **A balancing act**



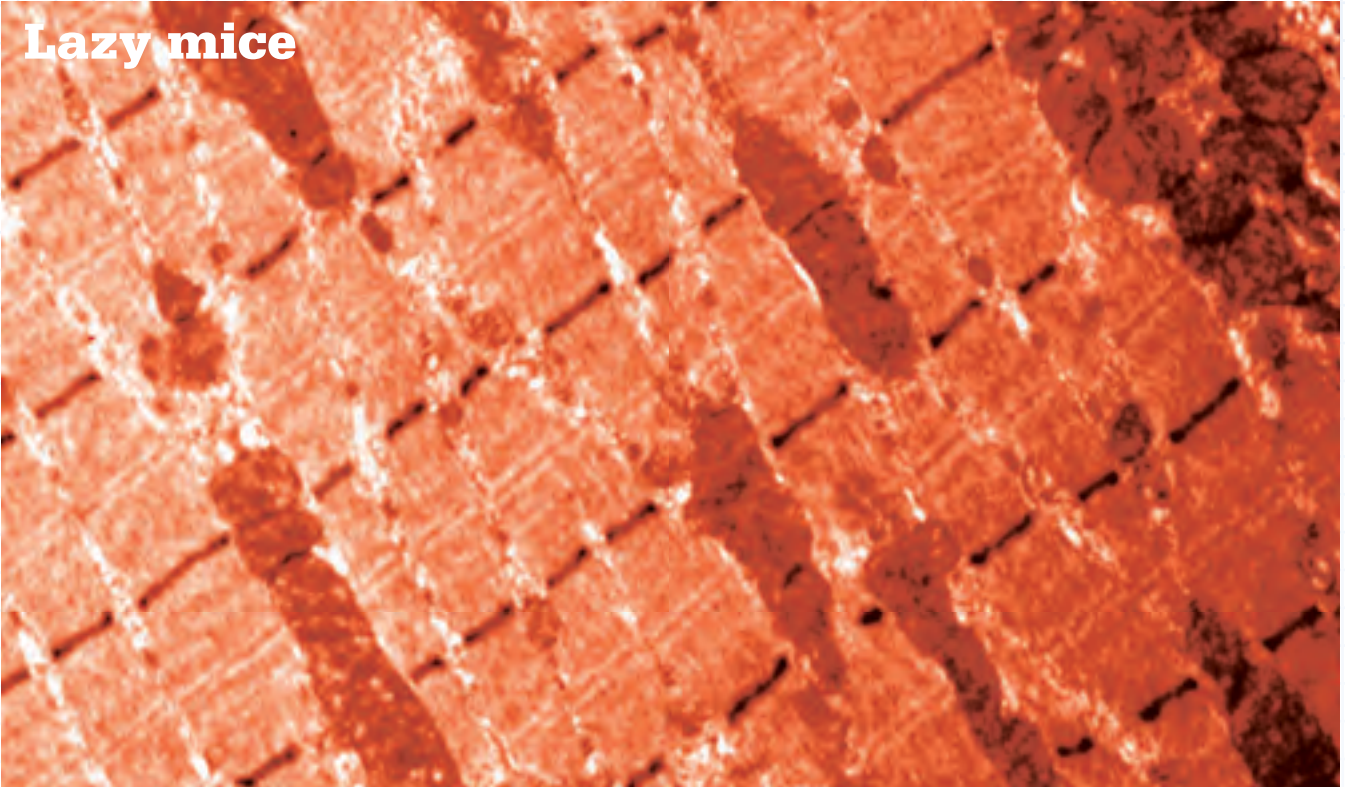
**Many know the hormone erythropoietin, or Epo, because of its use as a performance-enhancing drug in cycling. By increasing the rate of red blood cell production, Epo increases oxygen absorption, reduces fatigue and improves endurance, but its use has other, less desirable effects.**

**Sofie Singbrant, working in the Stem Cell Regulation Unit with Carl Walkley and colleagues published a paper in 2011 in the journal Blood, showing that increased levels of Epo in mice can cause a loss of bone mass, and have unexpected effects on the immune system.**

**While this work has some relevance to certain elite athletes trying to cheat the system, more importantly, it may also impact on the treatment of cancer and anaemia, where Epo is used to increase red blood cell numbers.**



## Lazy mice



**“They were less inclined to exercise and more tired when they were made to do so.” Sound familiar? In fact, SVI PhD student Hayley O’Neill is not talking about the reason that Australia is facing an obesity epidemic, but about the ‘lazy’ mice upon which she has focused her PhD studies.**

**In collaboration with Greg Steinberg at McMaster University in Ontario, Hayley and colleagues studied mice that were lacking a protein called AMP-activated protein kinase (AMPK) in their skeletal muscle.**

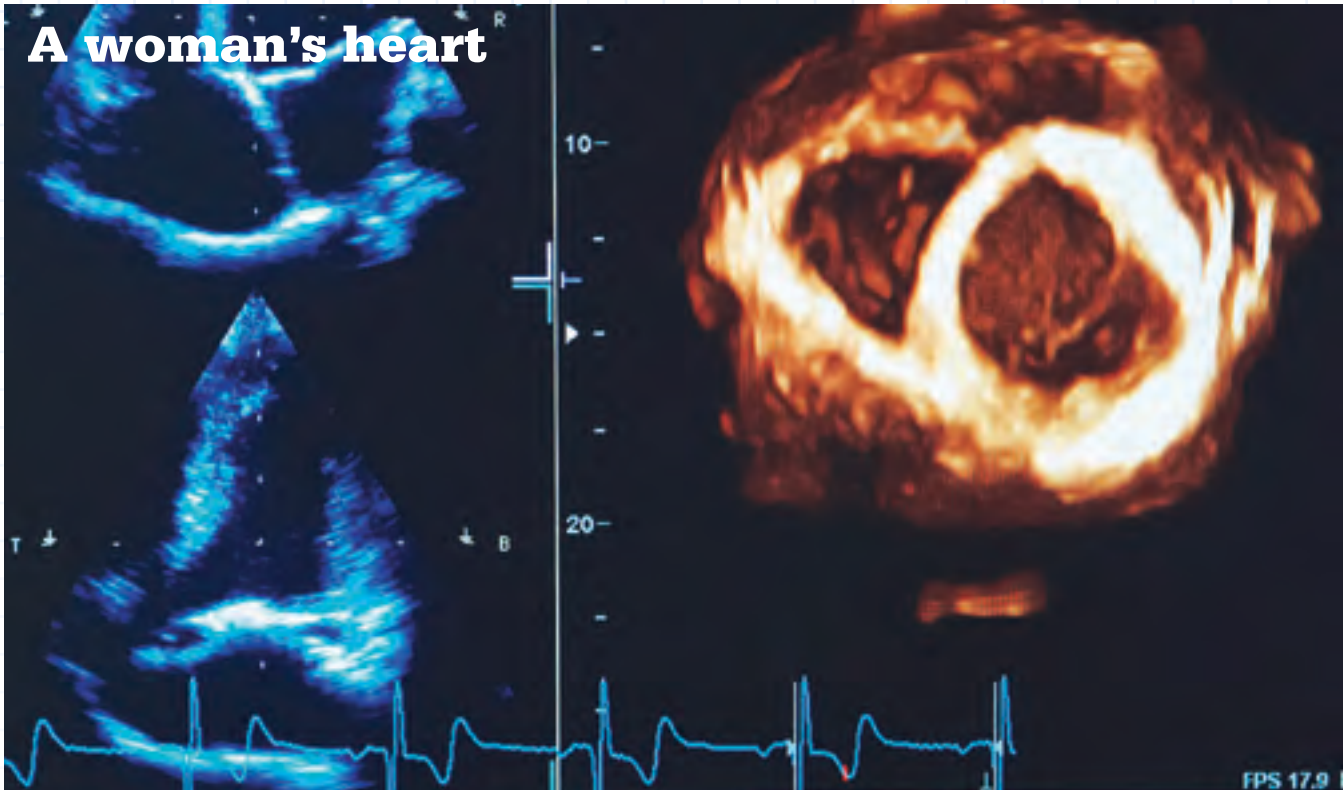
**AMPK is an incredibly important protein: it regulates the body’s use of energy by controlling the burning and storage of lipids and sugar. It is a major focus in the pharmaceutical industry because of its potential as a treatment for type 2 diabetes and obesity.**

**Hayley explains, “Our studies show that while AMPK was not required when the mouse was at rest, it was essential during exercise. This means that AMPK plays a critical role in regulating metabolism in muscles.”**

**Hayley says that while the research does not mean that we can blame our genes for our weight, it does explain the importance of AMPK in exercise and will help the researchers reveal the secrets of this important protein.**



## A woman's heart



**Heart disease is the leading cause of death in men and women. Once they come to hospital with symptoms, women have a worse prognosis than men. Associate Professor Jock Campbell showed in 2011 that differences between the structure of male and female hearts may contribute to this.**

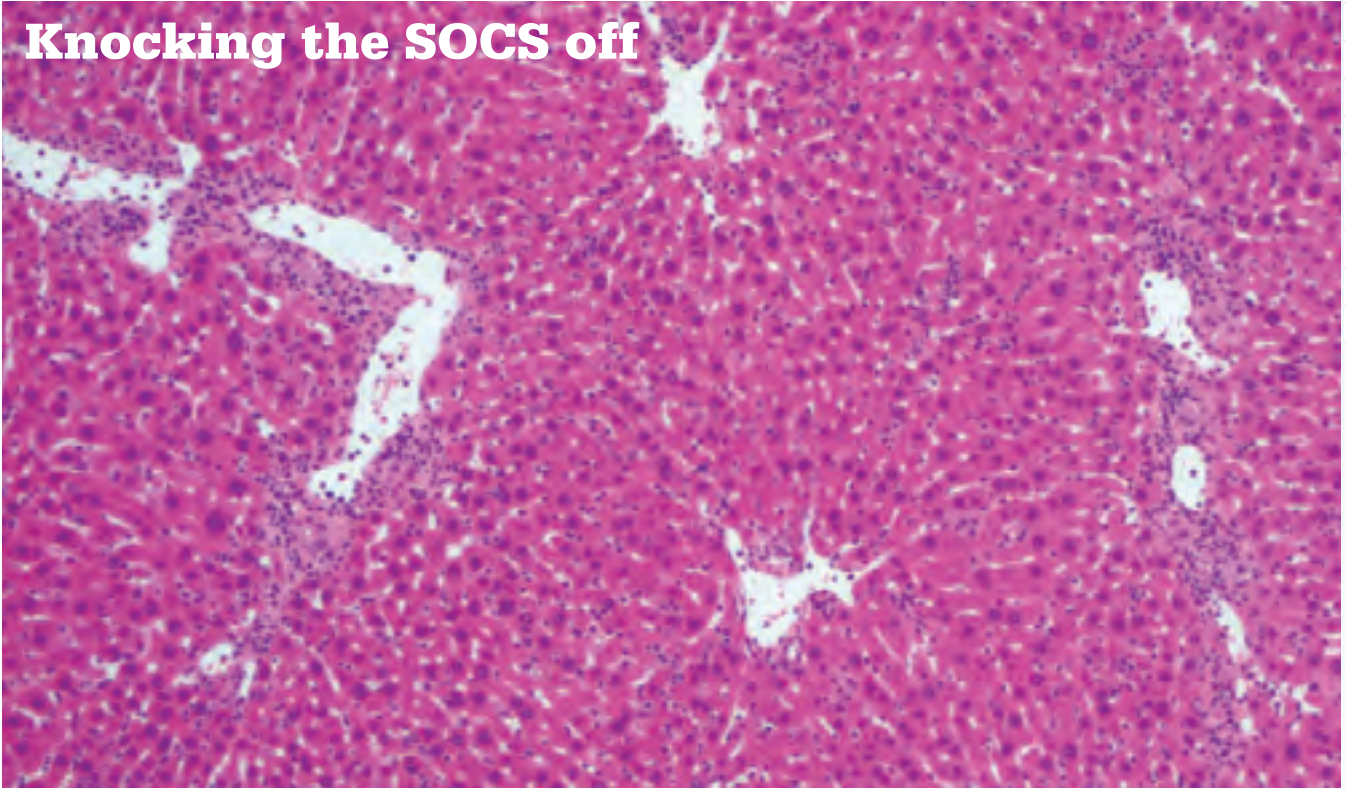
**In collaboration with the cardiac surgeons at St. Vincent's Hospital, Jock obtained small pieces of heart muscle from patients undergoing heart operations. When he compared the small blood vessels in heart muscle from men and women under the microscope he found, surprisingly, that the walls of women's small blood vessels were thicker than men's.**

**Jock says, "We know from other studies that blood vessels with thicker walls are more likely to constrict and limit blood flow. The shape of the blood vessels in women may reduce the supply of oxygen and nutrients to the heart muscle. This may result in chest pain and heart attacks, even when the woman's coronary arteries appear to be free of disease."**

**A more thorough understanding of how the differences between the male and female heart affect disease vulnerability will help to reduce death from heart disease.**

# 4

## Knocking the SOCS off



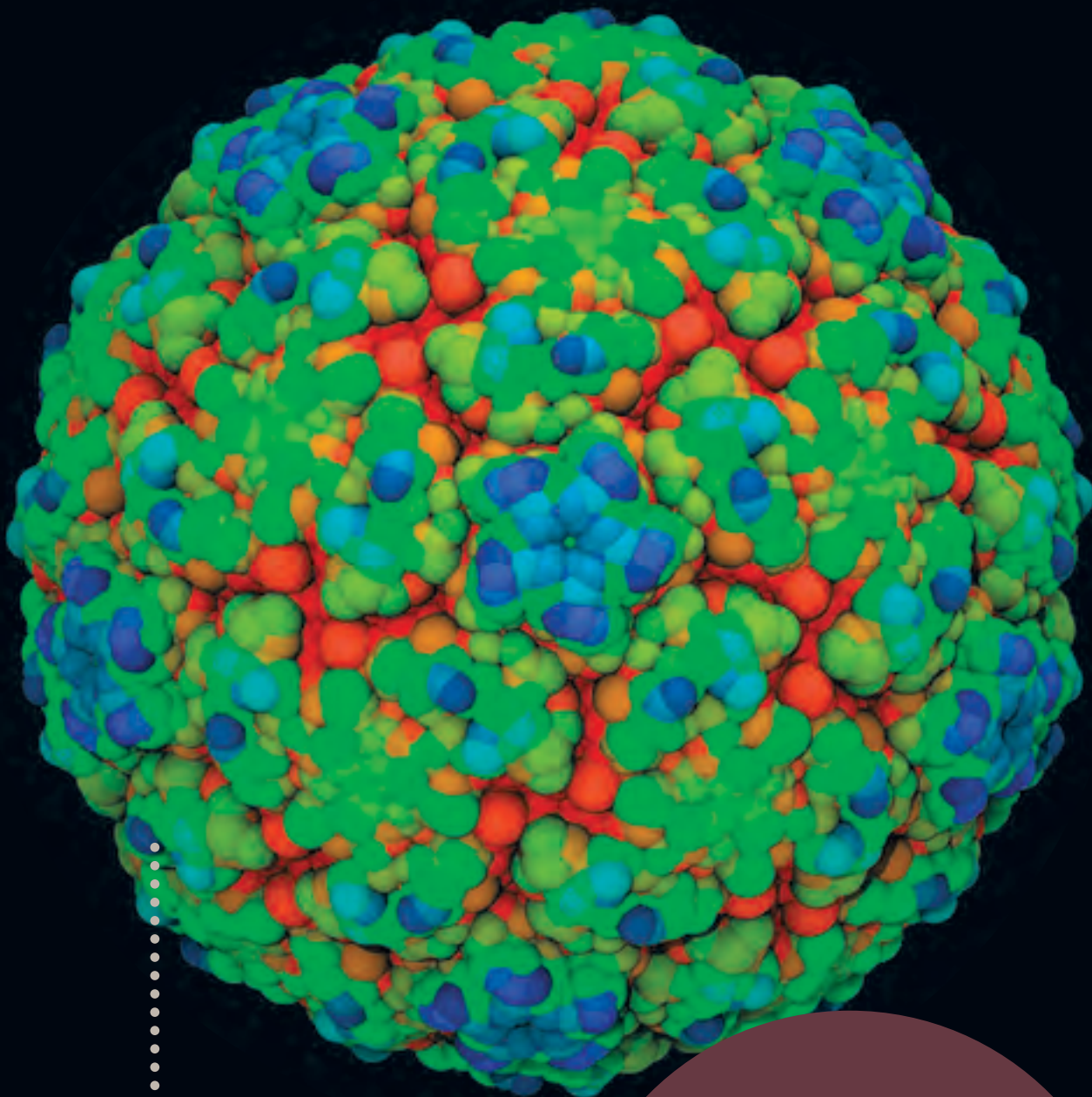
**Dr Nirupa Sachithanandan is interested in a specific type of white blood cell that, until recently, has been relatively overlooked. Called a macrophage, the cell has traditionally been thought of as the cell's garbage collector (loosely speaking, its name means 'big mouth') – these hungry white cells were first identified as scavengers of foreign invaders such as bacteria. However, it has recently become clear that, among other things, they are involved in the body's response to obesity.**

**Nirupa's PhD focused on the role of a family of proteins called the SOCS proteins in metabolism. These proteins acts as stop signs, helping to control signals that are relayed via chemical messengers called cytokines, which play an important role in diseases such as cancer and diabetes.**

**Working with her colleagues in the Immunology and Diabetes Unit, in 2011 Nirupa showed that mice lacking a member of the SOCS family, called SOCS1, in their macrophages were more sensitive to certain chemical signals that are increased in obesity. This indicates that SOCS1 plays an important role in protecting against the negative effects of obesity.**

**This research may lead to new strategies for the treatment of type 2 diabetes.**





Rendering of the three dimensional structure of the common cold virus. Researchers have crystallised the rhinovirus protein, diffracted X-rays off its surface and used the resulting diffraction pattern to determine the protein's three-dimensional structure. Using this knowledge, researchers can design molecules to interact with the protein, like designing a key based upon knowledge of a lock's structure (Image courtesy of Mike Kuiper).

The 1990s saw the emergence of drugs that were designed based on knowledge of the three dimensional structure of proteins. One of the first of these was a drug to treat the influenza virus, which was based on results from Australian research. Since then, research into protein structure has resulted in drugs for a range of conditions, including cancer, infectious disease and neurological disorders.



# DRUG DISCOVERY

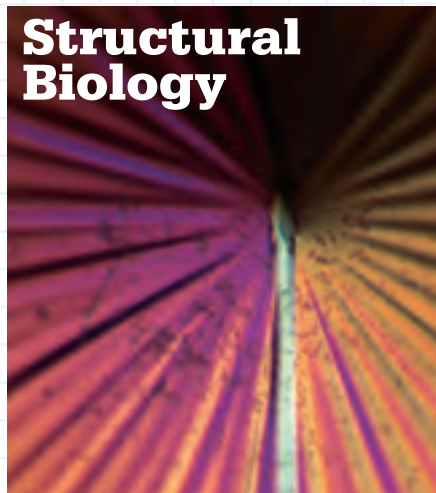
PROTEINS  
ARE THE  
BODY'S MOST  
ESSENTIAL  
BUILDING  
BLOCKS.

**In addition to contributing to the structure of the cell, proteins also act as molecular engines, controlling all of the body's functions. Their actions are diverse and complex and are dictated by their precise three-dimensional (3D) structure.**

**Determining the structure of a protein can help us to understand its function. Protein crystallography allows us to 'see' the 3D structure of proteins at the atomic level. The protein's 3D structure can then be used to help design new drugs for the treatment of disease.**



## Structural Biology



**The research in the Structural Biology Unit involves proteins implicated in cancer, brain disease and bacterial and viral infections.**

### **A new drug for a common cold – nothing to sniff at**

Rhinoviruses cause the majority of cases of the common cold as well as being responsible for sometimes severe exacerbations of underlying illnesses such as asthma, cystic fibrosis and chronic obstructive pulmonary disease. Rhinovirus infections are also associated with fatalities in immunocompromised patients such as transplant recipients. Although there is a clear medical need, the difficulties in developing a specific therapeutic against the human rhinovirus (HRV) have become almost proverbial, with the lack of a 'cure for the common cold' being used to highlight perceived flaws in scientific and medical progress. The Australian Biotechnology company Biota has developed a potent, orally available rhinovirus inhibitor, BTA798, which has progressed to phase IIb clinical studies in humans.

As confirmation of the mechanism of action of BTA798, the atomic structure of HRV2 in complex with BTA798 has been determined by X-ray crystallography. The compound occupies a site in the VP1 protein usually filled by a lipid-like molecule known as pocket factor. Identification of the residues comprising the BTA798 binding pocket highlights the high degree of conservation between the large number of HRV serotypes and species and supports the expectation of broad-spectrum activity for BTA798 against other enteroviruses, including polio. Our work on rhinovirus crystallography is in close collaboration with Biota.

### **Targeting inflammatory diseases**

3',5'-Nucleotide phosphodiesterase family 4 (PDE4) have been identified as therapeutic targets in a variety of conditions, particularly inflammatory diseases. While numerous compounds have not advanced past the clinic, Roflumilast (Daxas®, Nycomed) was recently launched in Europe and North America for the treatment of chronic obstructive pulmonary disease. The side effect profiles of many PDE4 inhibitors, which are related to the archetypal compound rolipram, have triggered interest in the development of novel chemotypes that may exhibit an improved therapeutic window. We serendipitously identified a novel class of PDE4 inhibitor while searching for antagonists of the parathyroid hormone-related protein (PTHrP) receptor. A series of six thiophene derivatives were identified as PDE inhibitors, and showed comparable inhibition to rolipram. Further compounds were synthesised with the most potent having an IC<sub>50</sub> of approximately 20 nM. Crystallographic studies of PDE4D2 complexed to four of these compounds revealed the atomic details of how they inhibit the enzyme and provide a structural basis for explaining a structure-activity relationship for this compound class. This work is in collaboration with SVI's Bone Cell Biology and Disease Unit (in particular Jack Martin and Pat Ho) and with Phil Thompson at the Monash Institute of Pharmaceutical Sciences.



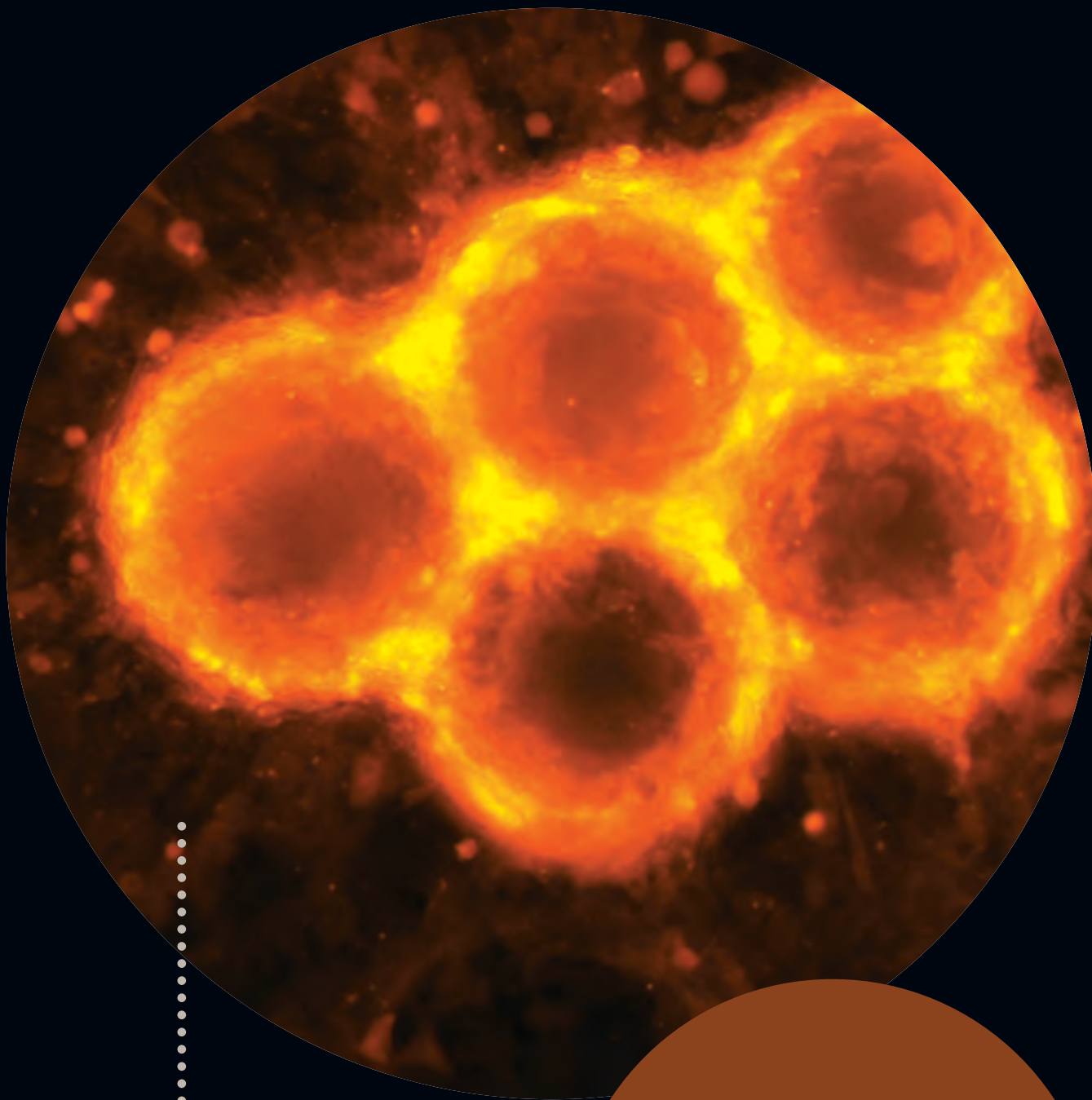
In 2011 Michael Parker was awarded one of Australia's most prestigious awards for medical research, the Ramaciotti Medal for Excellence in Biomedical Research. This award was made for outstanding discoveries in experimental biomedical research that have had an important impact on biomedical science. Michael says, "By determining three dimensional structures of medically important proteins we can improve our understanding of how each protein works and contributes to disease. It was a great honour to be awarded this medal, which also highlights the impact structural biology has had on Australian medical research."

## Unit

### **Michael Parker**

David Ascher  
Brett Bennetts  
Sophie Broughton  
Matthew Chung  
Gabriela Crespi  
Susanne Feil  
Chen Gao  
Michael Gorman  
Nancy Hancock  
Jessica Holien  
Sara Lawrence  
Belinda Michell  
Luke Miles  
Craig Morton  
Tracy Nero  
Julian Tang  
Jerome Wielens





Developing new treatments for type 1 diabetes. Image shows fluorescently labelled human cells genetically engineered to produce insulin (stained orange). The cells require a solid surface to grow on, such as these round microspheres. Researchers are exploring the use of genetically engineered insulin-producing cells combined with encapsulation devices as a new way of delivering insulin to people with type 1 diabetes.

Type 1 diabetes is one of the most common chronic diseases in children, occurring more frequently than cancer, cystic fibrosis, multiple sclerosis and muscular dystrophy. More than 140,000 Australians live with type 1 diabetes and around six more are diagnosed every day.

# TYPE 1 DIABETES

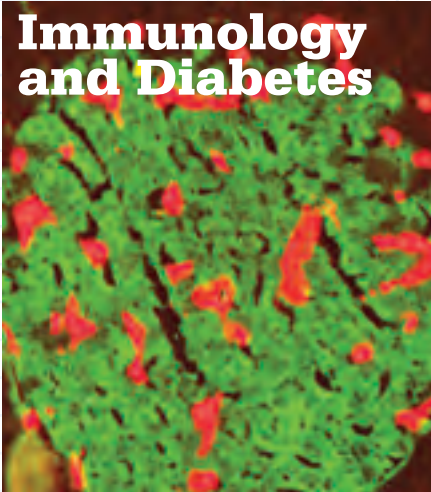
THE  
DIFFERENCE  
BETWEEN  
A HEALTHY  
PERSON AND  
SOMEONE  
WITH TYPE  
1 DIABETES  
LIES IN A  
TEASPOONFUL  
OF CELLS.

**That crucial teaspoonful contains the beta cells – the cells whose job it is to produce insulin, which regulates the levels of sugar in the blood. The inability to do so means that those diagnosed with type 1 diabetes have to regularly monitor their blood glucose levels, inject doses of insulin to maintain those levels and have a greater risk of complications such as kidney disease, nerve damage, blindness and heart disease.**

**People get type 1 diabetes because their body's own immune system, normally responsible for protecting them from pathogens and disease, has gone awry, and mistakenly targeted and directed the killing of the beta cells.**

**No-one knows why the immune system of some people mistakenly attacks their own cells, and no-one yet knows exactly how the cells are killed or which genes are involved. Methods have been established to replace the cells, but these remain imperfect.**

## Immunology and Diabetes



**Researchers in SVI's Immunology and Diabetes Unit focus on the fundamental questions in type 1 diabetes: which genes are involved, how the insulin producing cells are killed, why the immune system attacks them in the first place, and how to develop better treatments for people with the disease.**

### **Regulating diabetes with TNF blockade**

There has been a lot of interest in the action of chemicals, called cytokines, made by the immune system and how they contribute to development of type 1 diabetes. Mice that lack the receptor for a cytokine called tumour necrosis factor (TNF) are completely protected from diabetes. We sought to determine the mechanism of this protection. Our results show that TNF is not directly required for beta cell killing, but mice lacking receptors for TNF had an increased number of a subset of T cells called regulatory T cells. We showed that the increased number of these cells leads to suppression of the immune cells that cause diabetes. Our study suggests blocking TNF may be beneficial in increasing the function of regulatory T cells and suppression of type 1 diabetes.

### **Understanding how beta cells are killed – solving a cell death puzzle**

Type 1 diabetes is caused by death of insulin-producing pancreatic beta cells. One of the molecules that may kill beta cells is the Fas death receptor, which causes cell death after binding to Fas ligand on immune cells. While some reports suggest Fas is an important killing mechanism in diabetes, others do not, and this discrepancy has often been due to use of inadequate models to study this problem. We previously identified a molecule called Bid that is specifically turned on by Fas signalling in beta cells but not immune cells. Deficiency of

Bid does not affect development of anti-beta cell immunity, but does prevent FasL-induced beta-cell death. We studied diabetes development in Bid-deficient mice to determine whether Fas is an important killing mechanism. These mice developed type 1 diabetes and insulinitis similarly to wild-type mice, indicating that beta-cell death in type 1 diabetes can proceed without Fas-induced killing mediated by Bid.

### **Gene shuffling events point to a new gene contributing to diabetes**

Type 1 diabetes is a complex genetic disease. Because the human population is diverse, we used selective mating of mice that develop diabetes to map one of 25 genomic regions associated with this disease. Notably, a unique chromosome feature, called a recombination hotspot, resulted in an unusual shuffling of DNA segments in these mice and pinpointed a novel gene for which genetic variants were associated with increased risk for type 1 diabetes. Although the function of this gene is currently unknown, it is turned on in immune cells that participate in the destruction of insulin-producing beta cells. Ongoing studies aim to determine the function of this gene and how it contributes to type 1 diabetes in humans.

### **Interrogating T cells from the scene of the crime**

Type 1 diabetes develops when T-cells specific for the insulin-producing cells infiltrate the islets and kill them.



However, the antigens recognized by pathogenic T cells in type 1 diabetes are poorly understood. Identifying these antigens is of vital importance because it will lead to new antigen-based therapies; better assays to measure pathogenic T cells in blood; and a deeper understanding of the pathogenesis of human autoimmune diseases. We are the first in the world to isolate T-cell clones from the residual islets of people with type 1 diabetes. To date we have isolated T cells from four deceased organ donors who suffered from type 1 diabetes. Currently we are using these clones to identify the beta-cell antigens recognised by the T cells that cause type 1 diabetes.

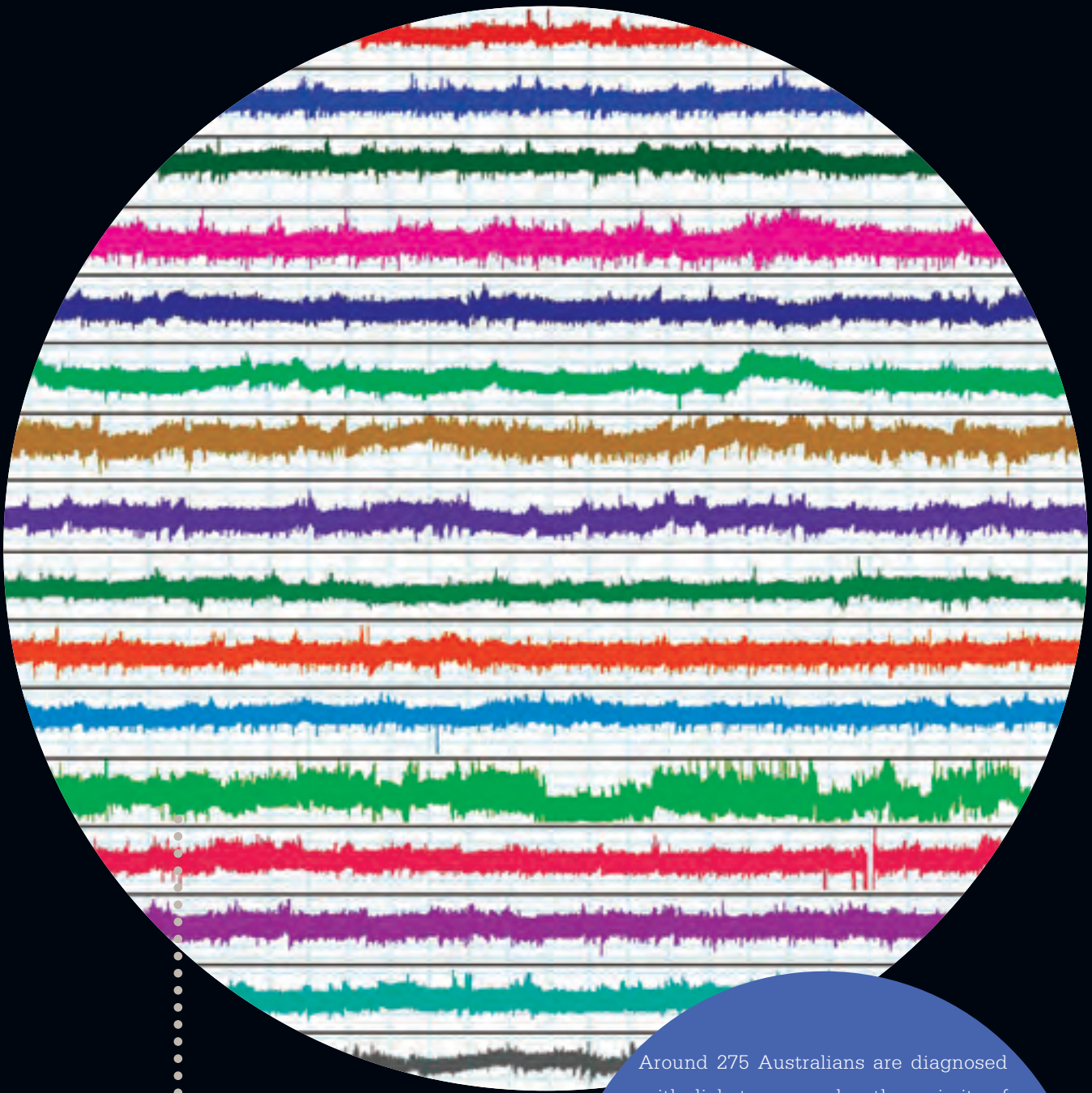
In 2011, researcher Helen Thomas was awarded the Juvenile Diabetes Foundation/Macquarie Group Foundation Diabetes Research Innovation Award, recognizing research from her lab that furthered understanding of how insulin producing cells live and die. Helen says, "Understanding how beta cells are killed in type 1 diabetes is very important if we are to stop the immune system response that leads to their death. Importantly, the molecules identified in our studies have unique structure and function, making the design of drugs for their inhibition possible."

## Unit

**Thomas Kay (Unit Head)**  
**Helen Thomas (Lab Head)**  
**Tom Brodnicki (Lab Head)**  
**Stuart Mannering (Lab Head)**

Batool Albatat  
 Michelle Ashton  
 Rochelle Ayala-Perez  
 Peter Campbell  
 Rochna Chand  
 Jonathan Chee  
 Edward Chu  
 Harriet Dashnow  
 Lorraine Elkerbout  
 Colleen Elso  
 Stacey Fynch  
 Kate Graham  
 Christine Henderson  
 Allison Irvin  
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 Mugdha Joglekar  
 Cameron Kos  
 Balasubramanian Krishnamurthy  
 Janine Kuehlich  
 Thomas Loudovaris  
 Leanne Mackin  
 Lina Mariana  
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 Hayley Moon  
 Vincent Murphy  
 Andra Necula  
 Natalie Sanders  
 Quah Hong Sheng  
 Joshua Szanyi  
 Iris Tan  
 Anne Thorburn  
 Sam Thorburn  
 Jibran Wali  
 Nancy Wang  
 Yuxing Zhao





Tracing of continuous blood pressure measurement in laboratory rats. The ability to accurately measure blood pressure, in addition to heart rate and other parameters, in conscious, unrestrained laboratory animals is of great value to researchers investigating new treatments for high blood pressure and heart disease that commonly occur in people with type 2 diabetes.

Around 275 Australians are diagnosed with diabetes every day, the majority of them with type 2 diabetes. Diabetes costs Australia over \$3 billion per year. Someone in Australia dies from a heart attack every 10 minutes. Heart disease is Australia's number one killer, with one in five people developing it in their lifetime. Its cost in human terms is impossible to quantify, but its economic costs are in excess of \$14 billion annually.



# **TYPE 2 DIABETES AND HEART DISEASE**

MUCH HAS BEEN MADE OF AUSTRALIA'S OBESITY EPIDEMIC.

**And with reason. More than 67% of Australians are overweight and more than 18% are classified as obese. In the last 20 years, Australia's overweight rate has risen faster than that of any other developed country and the increases show no sign of abating.**

**Obesity is a key risk factor for type 2 diabetes and heart disease, as well as for osteoarthritis and a number of cancers.**

**Type 2 diabetes is a disorder of the metabolism. People with the disorder do not produce enough insulin, which results in excess sugar in their blood. When combined with muscles that have become resistant to the effects of insulin, type 2 diabetes results.**

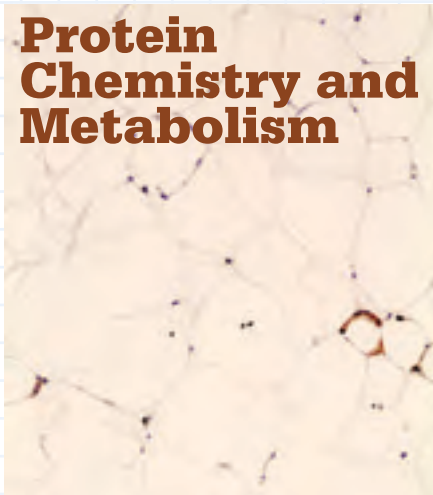
**Heart disease is the leading cause of death of people with diabetes.**

**In obese and overweight people, the natural control mechanisms that maintain the body's energy balance are impaired. For these patients, new treatments may well focus on an enzyme called AMP-activated protein kinase (AMPK). Simply put, when needed, AMPK passes a 'make more energy' message to the cell. By doing so, it regulates the burning and storage of fats and sugars, and affects the level of sugars and cholesterol in the blood stream.**

**Researchers at SVI are trying to find new ways of fighting the effects of Australia's obesity epidemic by focusing on the body's control of energy and by finding new ways of identifying people at risk of developing heart disease.**



## Protein Chemistry and Metabolism



**Research in the Protein Chemistry and Metabolism Unit is concerned with the control of the body's energy metabolism via an enzyme called AMP-activated protein kinase (AMPK).**

### AMPK and obesity

Individuals who are obese are frequently insulin insensitive, putting them at increased risk of developing type 2 diabetes. The accumulation in adipose tissue of inflammatory macrophages is a feature of obesity-induced insulin resistance. Genetic deletion of the AMPK  $\beta 1$  subunit in mice reduced macrophage AMPK activity and mitochondrial content, resulting in suppressed rates of fat oxidation.  $\beta 1^{-/-}$  macrophages displayed increased levels of diacylglycerol and markers of inflammation. The effect of AMPK  $\beta 1$  loss in macrophages was confirmed *in vivo* by transplantation of bone marrow from WT or  $\beta 1^{-/-}$  mice into WT recipients. When challenged with a high-fat diet, mice that received  $\beta 1^{-/-}$  bone marrow displayed enhanced adipose tissue macrophage inflammation and liver insulin resistance compared with animals that received WT bone marrow. Thus, AMPK activation and increasing fat oxidation in macrophages may provide a new therapeutic approach for the treatment of insulin resistance.

### Activating AMPK

AMPK is activated by metabolic stress and restores ATP levels by switching off anabolic and switching on catabolic pathways in cells. We find that AMPK is activated primarily by rising ADP levels and not by AMP, as previously thought. AMPK activation is dependent on ADP-controlled phosphorylation of Thr172 on its activation loop. AMPK embodies many features of an adenylate charge regulatory system envisaged by Atkinson, where anabolic and catabolic pathway regulation is modulated by adenine nucleotide ratios. In this way AMPK functions as an Adenylate Charge-Regulated Protein Kinase.



While fat cells have always taken the blame for obesity, recent research suggests that a type of white blood cell called a macrophage may be an equally important contributor. In 2011, SVI postdoctoral researcher Dr Sandra Galic showed that a version of AMP kinase is involved in the response of blood cells called macrophages to high fat levels. The researchers found that mice were more sensitive to the effects of a high fat diet when AMPK was removed from their blood cells. This research raises the exciting possibility that AMPK activating drugs may be able to treat other diseases where macrophages play a role, such as atherosclerosis and rheumatoid arthritis.

## Unit

**Bruce Kemp**

ZhiPing Chen

Sandra Galic

Frosa Katsis

Naomi Ling

Lisa Murray-Segal

Jonathon Oakhill

Matthew O'Brien

Hayley O'Neill

Sue Rogers

John Scott

Rohan Steel

Gregory Steinberg (McMaster University)

Shanna Tam



## Molecular Cardiology



**The goal of researchers in SVI's Molecular Cardiology Unit is to find ways to improve the cardiovascular health of Australians.**

### **Impact of diabetes and obesity on the heart**

Both obesity and diabetes increase the likelihood of an individual developing heart disease, and the current epidemics of obesity and diabetes mean that more people will develop heart disease. Obesity and diabetes increase the development of coronary artery disease, resulting in more heart attacks. In addition, people with obesity or diabetes are more likely to develop heart failure. Heart failure is a condition where the heart is unable to pump sufficient blood for normal daily activities. Obesity and diabetes reduce the ability of the heart to pump blood by causing the heart muscle to take longer to fill with blood between each heart beat, a condition that progresses to heart failure. We are investigating how obesity and diabetes affect the muscle of the heart. Previous studies of animals with diabetes suggested that diabetes increases the amount of fibrous tissue in the heart, and also increases the size of heart muscle cells and changes the small blood vessels of heart muscle. However, our studies of small pieces of heart muscle obtained from patients having heart surgery showed that diabetes does not have these effects in patients.

We are therefore investigating alternative mechanisms for the abnormal heart muscle function in people with diabetes. This research is only possible because patients agree to the surgeon taking a small piece of their heart muscle for this research during their heart operation. Understanding the reasons why obesity and diabetes affect heart muscle will assist in the development of new treatments to protect people with obesity and diabetes from developing heart failure.

### **Getting more benefit from new drugs**

A new drug called aliskiren was recently approved for the treatment of high blood pressure. When we studied the effects of aliskiren in rats we found that it increased the amount of a protective molecule in the heart called bradykinin. This finding was totally unexpected and we are investigating whether aliskiren can protect the heart from heart attacks and from heart failure. Thus, aliskiren offers the possibility of benefits for patients additional to those provided by the lowering of high blood pressure.

Since 2005, Associate Professor Jock Campbell has been collecting a 'bank' of heart biopsies from people having open-heart surgery. Researchers in the Molecular Cardiology Unit are using the bank to get a clearer picture of what happens to the heart muscle of people with coronary artery disease, and with the deterioration of heart function that accompanies obesity, diabetes and ageing. This research would not be possible without the active participation of individuals undergoing open heart surgery, who consent to the surgeon taking a biopsy of their heart muscle. For Jock, it is both an honour and a privilege to collaborate with the community in this research.

## Unit

### **Duncan Campbell**

David Prior

Suang Suang Koid

Jennifer Coller

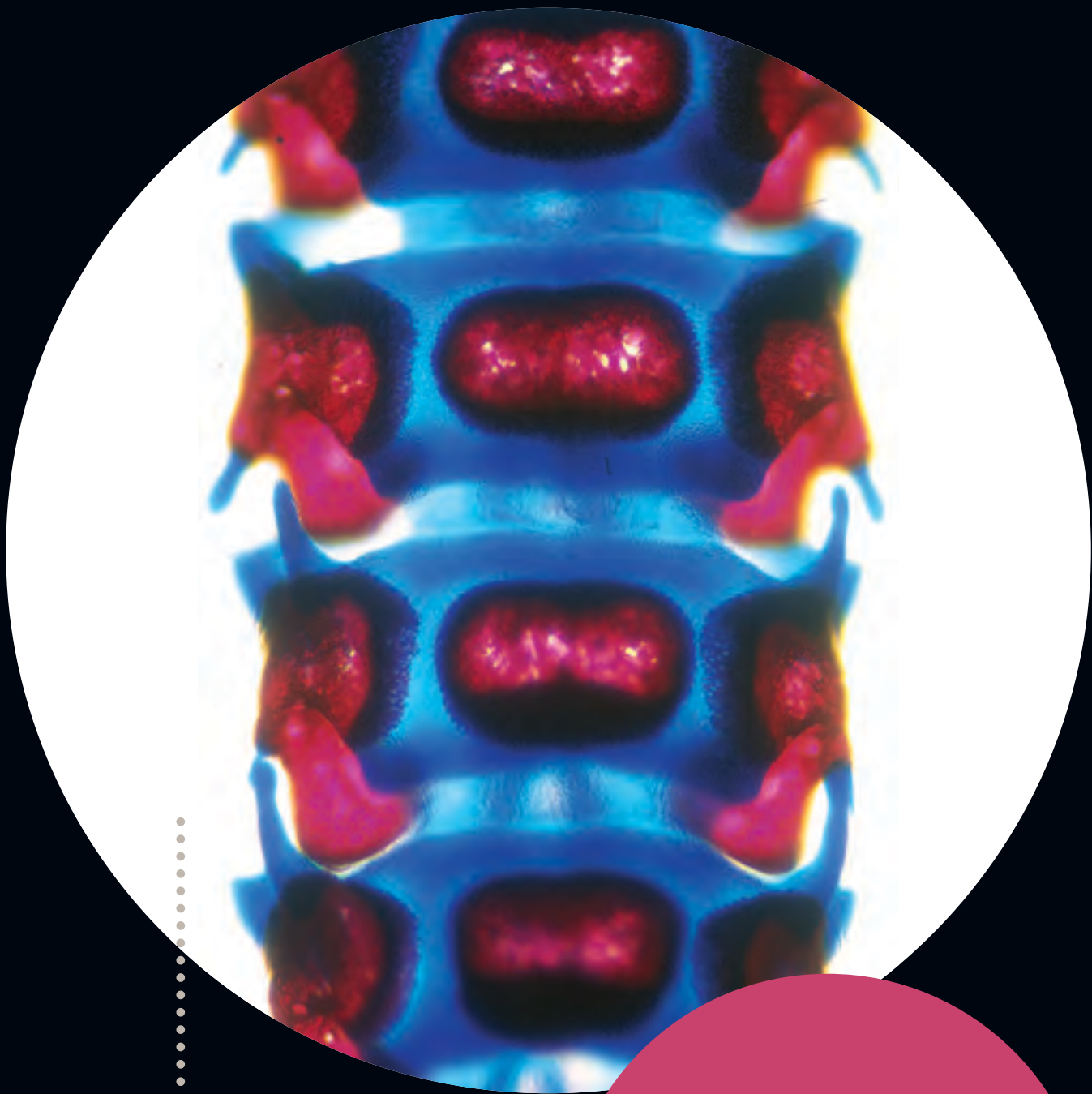
Laura Mocioaca

Gladys Rodriguez

Francoise Campbell

Robyn Kelly





A section of spine of a mouse stained for cartilage (blue) and bone (red). More sensitive techniques enable SVI researchers to identify the individual cells that make up bone and determine their contribution to diseases such as arthritis and osteoporosis.

Over 2 million Australians are affected by osteoporosis. Every 6 minutes, someone is admitted to an Australian hospital with an osteoporotic fracture. The direct health costs of osteoporosis are estimated at \$1 billion per year.

# OSTEOPOROSIS AND ARTHRITIS

AS YOU READ  
THIS, YOUR  
BONES ARE  
UNDERGOING  
RENOVATION.

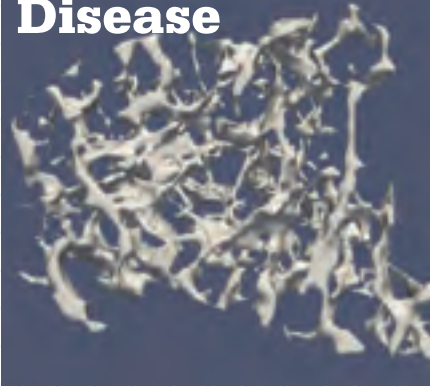
**Demolition crews, made up of cells called osteoclasts, are blasting away at old bone, while builders, called osteoblasts, are replacing the old material with brand new, strong bone.**

**Just like a building site, specialist teams are also needed. These include cells called osteocytes, which, among other things, can direct where the new bone is laid. There are also 'outside tradies' involved – nerve cells and special types of blood cells – which have their own special jobs to do.**

**And communication is essential, just as it is in the construction industry. If the demolition crew destroy more bone than they should they can weaken the whole structure, which leads to osteoporosis. Arthritis results if the ends of the bones wear badly, or if immune cells mistakenly attack cells at the joints.**

While arthritis is often considered a disease of old age, it is not a natural part of ageing: in fact, more than 60% of the 3.85 million Australians affected by arthritis are of working age.

## Bone Cell Biology and Disease



**By working to understand the lines of communication in bone, researchers in the Bone Cell Biology and Disease Unit aim to help develop treatments for diseases such as osteoporosis, arthritis and cancers that grow in bone.**

### Region-specific control of bone formation by blood vessel formation

Bone formation is a process carried out exclusively by stromal-derived osteoblasts. In contrast, bone and cartilage destruction are carried out by osteoclasts, cells formed from haemopoietic precursors. Both processes are needed to produce a skeleton that is strong where it needs to be, but light where extra strength is not needed. In 2011, researchers in the Bone Unit discovered that one factor, called leukemia inhibitory factor (LIF), is needed to control both of these processes, but in a region and age-specific manner. In growing bone, such as the bones of children, LIF is produced by cartilage cells at the growing ends of the bones. There, LIF controls osteoclast formation by regulating the formation of blood vessels in that region. In contrast, in adult bone, the role of LIF in controlling osteoclast formation and vascularisation is redundant.

In this context, LIF regulates the commitment of osteoblast precursors, shifting their differentiation towards osteoblast differentiation rather than adipocyte (fat cell) formation.

### Regulation of osteoclastic genes by oncostatin M in the context of inflammatory arthritis

Rheumatoid arthritis (RA) is an inflammatory joint disease characterised by inflammation of the joint lining and destruction of articular cartilage and bone. One focus for our studies is to identify factors that mediate bone destruction in inflammatory joint diseases like RA; one such factor is the cytokine oncostatin M (OSM). Using a mouse model of RA, we have identified increased expression of OSM and its receptors in RA-affected knee joints, particularly in cell types that contribute to joint destruction such as synovial fibroblasts. In isolated synovial fibroblasts, OSM, acting via its specific receptor, OSMR, potently induces expression of the pro-inflammatory and pro-bone resorption cytokine IL-6 and the pro-resorption cytokine RANKL. OSM also acts in concert with the major pro-inflammatory cytokines IL-1 and TNF, to further increase IL-6 and RANKL expression in these cells; as well as the IL-1 receptor, thereby amplifying IL-1 effects. Together our findings highlight the potential for OSM to contribute to both inflammation and joint destruction in RA.





2011 was a red-letter year for PhD student Farzin Takyar. Farzin's work on the role of signalling molecules called ephrins in bone received awards from the key international bone research societies. Farzin showed that when a particular ephrin was inhibited, the number of bone forming cells on the surface of the bone increased, but strangely, the amount of bone did not increase. In fact, when combined with a known treatment for osteoporosis, the amount of bone present was actually reduced because more bone destroying cells were formed. Farzin and his colleagues are continuing this research, to determine what it means for ephrin-based therapies in the future.

## Unit

**Natalie Sims (Unit Head)**

**Jack Martin (Unit Head)**

**Nicole Walsh (Lab Head)**

Holly Brennan

Ling Yeong Chia

Blessing Crimeen-Irwin

Pat Ho

Joshua Johnson

Rachelle Johnson

Benoit LeGoff

Narelle McGregor

Kong Wah Ng

Sueli Pompolo

Ingrid Poulton

Evange Romas

Farzin Takyar

Brett Tonkin

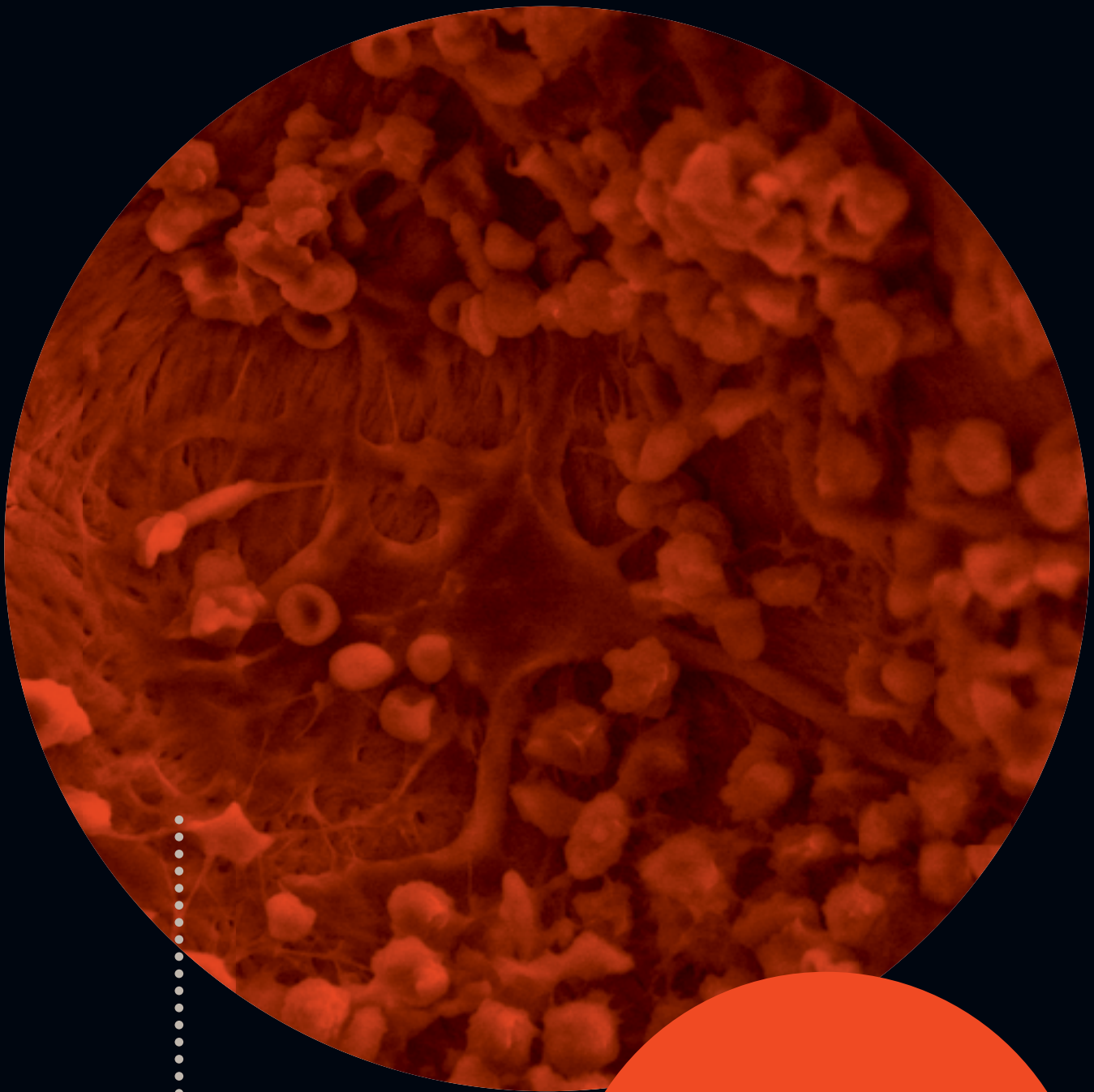
Stephen Tonna

Emma Walker

Sundy Yang

Mohamed (Zaid) Zainuddin





A scanning electron micrograph of a section of bone, showing collagen fibres in the background, developing blood cells and one large central osteoblast (a cell responsible for bone formation).

In 1960, a child diagnosed with the most common type of childhood leukaemia had a less than 5% chance of survival. Today, about 85% of children with this type of leukaemia live more than 5 years. However, around 1,400 Australians still die of leukaemia every year.

# STEM CELLS

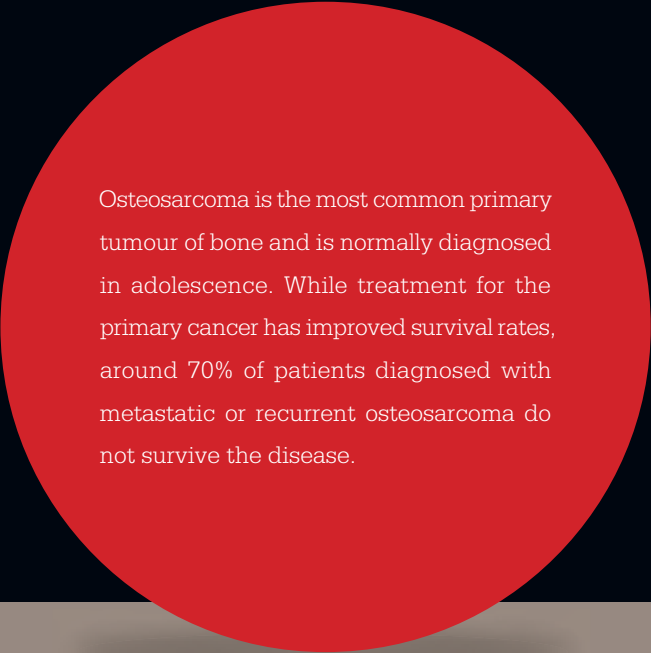
## STEM CELLS ARE HOW WE ALL BEGIN:

**Stem cells are how we all begin: a primitive cell with the potential to develop into the some 200 diverse cell types that make up our bodies. It is now recognised that adult stem cells also exist within tissues, where they play a role in normal maintenance and repair.**

**Since their potential was first recognised, adult stem cells have been touted as a cure-all for conditions as diverse as heart disease and male pattern baldness. However, their most successful implementation has remained as a treatment for disorders of the blood and immune systems.**

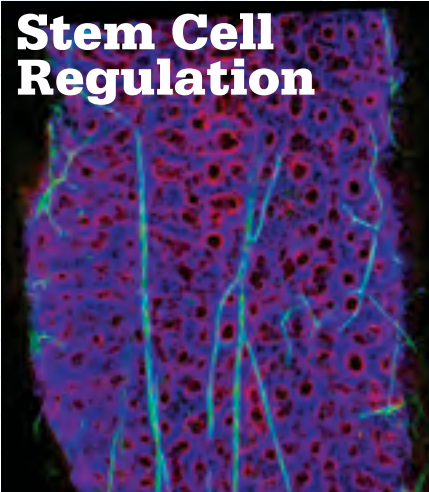
**A complex series of steps must occur in order for a stem cell to become a specialised blood cell. The exact mechanics of how this happens is not yet fully understood. However, it is known that if this process goes awry, cancer can develop. These cancers, which affect the blood or bone marrow, are known as leukaemia.**

**By understanding how stem cells work, researchers hope to be able to understand their role in disease and develop new treatments.**



Osteosarcoma is the most common primary tumour of bone and is normally diagnosed in adolescence. While treatment for the primary cancer has improved survival rates, around 70% of patients diagnosed with metastatic or recurrent osteosarcoma do not survive the disease.

## Stem Cell Regulation



### Understanding how myelodysplastic syndromes occur

Myelodysplastic syndromes (MDS) are a heterogeneous subset of blood cell diseases that frequently progress to acute myeloid leukaemia. The underlying causes of MDS are poorly understood and as a result there are no current curative therapies. We have generated a mouse model of MDS that completely recapitulates the human disease. We are using this model to delineate the key causes of the disease. This will allow us to identify better therapies for patients with MDS.

### Models of osteosarcoma

We have developed and characterised a new model of the most common type of bone cancer, called osteosarcoma. This cancer is most common in children, and patient outcomes have not improved for many years. We now have developed models of human osteosarcoma that represent the different types of tumours seen in patients. We are seeking to use these models to test and identify new approaches to treating this cancer.

**Adult stem cells are the focus of research in the Stem Cell Regulation Unit, where researchers aim to understand their influence on diseases of the blood and bone, including cancers such as leukaemia and osteosarcoma.**



In late 2011, a team consisting of SVI researchers Associate Professor Louise Purton, Dr Carl Walkley and Professor Michael Parker were awarded a \$2 million grant from the Australian Cancer Research Foundation (ACRF). The new ACRF Rational Drug Discovery Centre will provide Australian cancer researchers with access to early stage drug discovery tools, bridging the gap that exists between academia and industry in the drug discovery pipeline. Louise says, "Every year, 100,000 new cases of cancer are diagnosed in Australia. While survival rates have increased significantly over the past 20 years, 36,000 Australians die each year of the disease. Our aim is to improve these statistics, and the ACRF funding gives us the best chance to do so."

## Unit

**Louise Purton**

**Carl Walkley**

Emma Baker

Shreya Bhattacharya

Rachael Costanzo

Alanna Green

Ankita Gupte

Jean Hendy

Chacko Joseph

Tanja Jovic

Hannah King

Brian Liddicoat

Hui Peng Lim

Tony Mutsaers

Alvin Ng

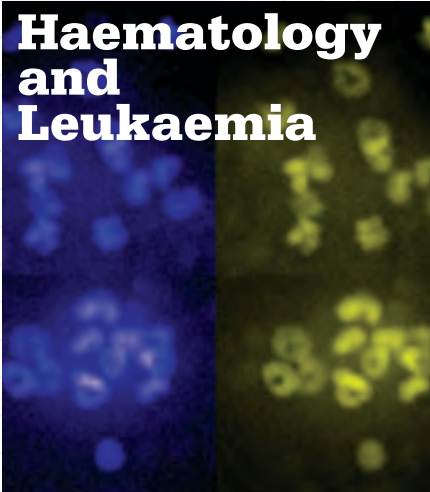
Julie Quach

Megan Russell

Sofie Singbrant Soderberg



# Haematology and Leukaemia



**The Haematology and Leukaemia Unit focuses on understanding how blood cells mature and how leukaemia disrupts normal blood cell maturation.**

## **The responsible genes**

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 using a retroviral cDNA library screening method in primary mouse cells. Additionally, we are creating leukaemia/lymphoma mouse models of T cells and other blood cell lineages using retroviral overexpression. We use multiparameter flow cytometry and cell sorting to analyse these models.

## **The responsible cell**

With the advent of specific monoclonal antibodies and high speed flow cytometry, it has now become possible to isolate very small subsets of bone marrow subpopulations that are responsible for development of all the different blood lineages. We are using this technology to ultimately identify the leukaemic stem cell (LSC) and the leukaemia-initiating cell (LIC) in mouse models of lymphoma and myeloid leukaemia. Once identified, the LSC and/or the LIC will be molecularly compared to its normal counterpart to identify the genes that allow the LSC or LIC to self-renew and propagate disease. These genes can ultimately be used as targets to design drugs that are more specific and have less side effects than current therapies.

Sita Dewamitta followed a long road to end up at SVI. She completed her medical degree at Colombo University in Sri Lanka and then went on to do a PhD at the University of Kyoto in Japan. During her PhD studies she became interested in how the immune system develops, and how this development may go wrong in leukaemia. This curiosity led her to work with David Izon in SVI's Haematology and Leukaemia Unit.

## Unit

**David Izon**

Sita Dewamitta

Monique Smeets





Chromosomes from an osteosarcoma (bone cancer) cell. Chromosomes can be stained and arranged by colour to produce what is known as a karyotype. While a karyotype isn't detailed enough to reveal information about the individual genes on a chromosome, it can show whether the chromosomes as a whole are in working order and it may help to diagnose and understand diseases. Normal cells have two copies of each chromosome (except for the sex chromosomes). In the example shown, the cancer cell has gained extra chromosomal copies.

One in two Australians will be diagnosed with cancer in their lifetime and over 100,000 new cases are diagnosed every year. Although survival rates have increased significantly over the past 20 years, cancer remains a leading cause of death: every year over 36,000 Australians die of the disease.



# CANCER

THE 30  
TRILLION  
CELLS IN THE  
HUMAN BODY  
ALL ARISE  
FROM A SINGLE  
FERTILISED  
CELL.

Even when we are fully grown, these cells are in a constant process of growth, death and renewal, allowing, for example, our bodies to respond to injury, recover from illness, our hair to grow and our weight to fluctuate.

Most of the cells in the body contain DNA, which acts as a cellular blueprint. DNA is a series of chemical "letters", arranged in units called genes. Only certain genes are active in each cell, but each cell has a full copy of the entire DNA. So before a new cell can be made, all of the DNA in the parent cell must be copied.

Considering that each cell that is generated must copy around 3 billion letters of DNA, it is not surprising that sometimes the copies are not 100% accurate. In most cases this makes no difference; however, if a mutation occurs in a gene whose job it is to instruct a cell to divide, or in one that tells a cell to stop dividing, uncontrolled cell growth may occur.

When this occurs, a mass of cells develops. The mutated cells continue to grow, accruing further mutations and cleverly subverting nearby blood vessels, giving them the ability to grow even faster. At this point, cells can detach from the growing mass, make their way onto the body's 'highways' – the bloodstream or lymph – and find another site where they can grow, resulting in secondary tumours.

If attempts to eradicate them with radiation, surgery and chemotherapy fail, the cancer cells are eventually so successful that they ironically cause the death of the organism upon whose survival they are dependent.



## Molecular Genetics



**The Molecular Genetics Unit works to understand how the DNA damage that underlies most cancer develops.**

### A new molecular function for ASCIZ

The zinc-finger protein ASCIZ was originally cloned in our laboratory as a novel DNA base damage response protein, but we recently found that “knock out” mice that lack the ASCIZ gene die during late gestation with multiple organ development defects, most notably complete absence of lungs. This phenotype is due to a separate DNA damage-independent function of ASCIZ as a transcription factor. We have now found that ASCIZ plays a key role in the regulation of the dynein light chain DYNLL1. Absence of ASCIZ in human, mouse or chicken cells leads to >10-fold lower DYNLL1 levels. ASCIZ binds directly to the DYNLL1 promoter and can activate its expression in a Zinc-finger dependent manner. Interestingly, ASCIZ also contains at least 10 DYNLL1-binding sites in its transcription activation domain. This enables ASCIZ to sense cellular DYNLL1 levels, and increasing DYNLL1 binding to these sites progressively inhibits ASCIZ’s transcriptional activity in a unique feedback mechanism to keep free DYNLL1 levels stable. In addition to the dynein motor complex, DYNLL1 also regulates some 100 other proteins involved in diverse cellular processes.

A key aim of our future work is to determine which DYNLL1 targets are involved in the developmental defects of ASCIZ knock-out mice.

### Regulation of yeast checkpoint kinases

The yeast Rad53 kinase (similar to the human cancer-associated Chk2 kinase) plays key roles during normal DNA replication and in response to exogenous DNA damaging agents. We recently found that Rad53 prevents spontaneous DNA damage during normal S phases via an unexpected non-catalytic scaffold function that involves phosphorylation of its N-terminal SQ/TQ cluster. In addition, we are also exploring the fine molecular details of how Rad53 activation through phosphorylation is regulated under physiological conditions in vivo.



2011 saw PhD student Sabine Jurado's hard work pay off with an article in the Journal of Biological Chemistry. Sabine's PhD focuses on a protein called ASCIZ, which was originally discovered in the Unit. The group has shown that ASCIZ is involved in the cell's response to DNA damage and it also plays a crucial role in the development of the lungs. Sabine showed that ASCIZ controls the production of another protein called DYNLL1. DYNLL1 is a molecular scaffold, which brings proteins into close proximity with each other so that they are able to perform their functions. The results indicate that the absence of lungs in animals without the ASCIZ protein may be due to insufficient levels of DYNLL1.

## Unit

### Jörg Heierhorst

Lindus Conlan  
Kimberly Gleeson  
Nicolas Hoch  
Sabine Jurado  
Xianning Lai  
Nora Tenis  
Angela Tam



## Genome Stability



**Researchers in the Genome Stability Unit focus on a number of rare familial cancer syndromes, hoping that the lessons learnt will give them new insights into the cause of more common cancers.**

### **The Role of Fanconi genes in breast and ovarian cancer predisposition**

Several genes have been shown to cause a familial predisposition to breast cancer when one copy is inherited. These include multiple genes such as BRCA2/FANCD1 that can also cause the rare disorder Fanconi anaemia, when two copies are inherited. Familial breast cancer predisposition, and Fanconi anaemia both result from decreased ability to repair damage to DNA. We aim to understand how familial breast cancer and Fanconi anaemia are linked, by closely studying these DNA repair signalling mechanisms. We will determine how FANC genes contribute to cancer protection, and highlight potential strategies for treatment of breast cancer by specifically targeting this genetic pathway.

### **Structure and function of large DNA repair complexes**

Many of the DNA repair functions of proteins involved in protecting us from cancer are not clearly defined, as the proteins participate in large multi-subunit protein complexes. We are using a cutting-edge approach to co-express these proteins together in large quantities so that they can be purified and analysed in vitro as intact complexes. Using this technique we have purified a four protein complex essential for homologous recombination in human cells and have determined its biochemical properties and structure using single particle electron microscopy. We are now working on the purification of other large DNA repair complexes for similar analysis.

We combine this work with a series of cell-based approaches such as analysis of chemotherapy toxicity, protein interaction techniques and genetic rescue of cell lines from patients with DNA repair defects. This combined approach allows us to create a better understanding of the contribution of each gene product to the essential cellular DNA repair function. Having a large-scale source of purified recombinant enzymes will also allow us to search for the inhibitors or activators that are required for the clinical targeting of DNA repair pathways in cancer treatment.

Dr Andrew Deans arrived at SVI in 2011 to head the new Genome Stability Unit. He did his PhD at the Peter MacCallum Cancer Centre in Melbourne and then went to London for nearly 5 years to complete his postdoctoral work in Steve West's lab at Cancer Research U.K., one of the foremost DNA repair labs in the world. Andrew's work focuses on two familial cancer syndromes, called Bloom's Syndrome and Fanconi's anaemia. The diseases are relatively rare, but have a lot to teach researchers like Andrew about the basic mechanisms of DNA repair that protect us from cancer.

## Unit

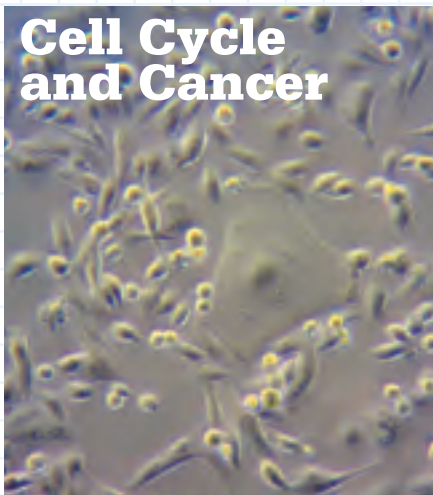
**Andrew Deans**

Joybrata Banerjee

Vince Murphy

Sylvie van Twest





**Work in the Cell Cycle and Cancer Unit focuses on the role of cell cycle proteins in the development of cancer.**

## Unit

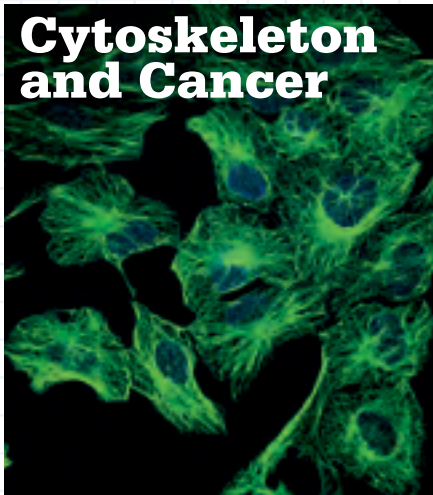
- Boris Sarcevic**
- Randy Suryadinata
- Ricardo Tan
- Siti Roesley

### 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 deacetylases (HDACs) to pRb to inhibit transcription and cell cycle progression. We have demonstrated that RBP1 binds to mSIN3A and histone deacetylase 1 (HDAC1), which are transcriptional regulators. RBP1 is phosphorylated by cyclin/CDKs in vitro and on the same sites in cells during cell cycle progression. This phosphorylation disrupts RBP1 association with pRb. These results show that phosphorylation of RBP1 and pRb disrupts their association to activate transcription and cell cycle progression.

In 2011, Randy Suryadinata was one of 30 Australian researchers selected to receive funding from The Cure Cancer Australia Foundation. With this support, Randy will investigate a type of protein called pRb, which is a known tumour suppressor gene. In normal cells, pRb acts as a 'brake', stopping the growth of cancer cells. Before a cancer can develop, this 'brake' must be turned off by mutation. Randy is investigating how the protein works to inhibit the growth of tumours in normal cells, in order to be able to develop therapies for the treatment of cancer patients.





# Cytoskeleton and Cancer

**Researchers in the Cytoskeleton and Cancer Unit focus on the cellular cytoskeleton, which provides a scaffold for the cell's inner workings and is involved in the spread of cancer.**

## Unit

### Ora Bernard

- Juliana Antonipollai
- Cristina Gamell-Fulla
- Kevin Mittlestaedt
- Alice Schofield

### Stopping the resistance

Neuroblastoma is the most common extracranial solid tumour in childhood and the most frequently diagnosed malignancy during infancy. Despite significant advances in understanding the genetics of the disease, the outcome for children with a high-risk clinical phenotype has improved only modestly. Most neuroblastomas initially respond to chemotherapy and local radiotherapy, however neuroblastoma frequently relapses with resistant disease, suggesting selection for drug-resistant cells during treatment. Thus, current attempts to improve the survival of patients with neuroblastoma, as well as other cancers, largely depend on strategies to target tumour cell resistance: there is therefore a need to understand the molecular mechanisms that mediate resistance to chemotherapeutic drugs. Interestingly, expression of LIMK2, a key regulator of the actin cytoskeleton, is significantly increased in neuroblastoma cells selected for their resistance to microtubule-targeted drugs.

Furthermore, elevated LIMK2 expression correlates with resistance of human cancer cell lines to a wide range of chemotherapeutic drugs with different mechanisms of action, suggesting that LIMK2 may be a predictive marker of drug resistance. Despite this clear link, the signalling pathways that functionally integrate high levels of LIMK2 and anticancer drugs resistance are not fully elucidated. Therefore, the main aim of our project is to elucidate the functional role of LIMK2 in chemotherapeutic drug response in neuroblastoma cells.

Ora Bernard has spent her lifetime exploring the secrets of the cell all over the world – from Israel, to France, Canada, Switzerland and finally, Australia. Ora has focused her more recent work on investigating the role of the LIM kinase family – originally identified in her lab – in cell movement and the spread of cancer. In 2011, Ora announced that she would retire. Over her career, Ora has supervised 15 PhD students and mentored many others. While she will remain involved in her current two PhD students' studies, she will wind down the activities in her lab, leaving a new generation to follow in her footsteps.



## Pharmacogenomics



**Researchers in the Pharmacogenomics Unit are interested in how the combination of genes and environment affect a person's ability to fight disease.**

### **Inhibiting breast to bone metastasis**

Metastasis is the primary cause of mortality associated with cancer, yet the molecular mechanisms leading 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 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**

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 identified several genes that appear to play a critical role in the generation and subsequent pathological consequences of accumulated extracellular matrix. The expression of these genes may also play a role in other disease states, and potentially modulate drug activity within specific tissues that are the target of current therapies. We are collaborating with the SVI's Structural Biology Unit to elucidate the crystal structure of one of these gene products and design specific inhibitors to block its detrimental biological activity.



Most drugs have different effects in different people. For this reason, using the one type of drug for all people with a specific disease is not optimal. Our Unit is exploring how to capture information from individual patient tissues at both the cell and DNA level in order to better rationalise therapies. In 2011, Sam Rudstein used a highly sophisticated DNA fingerprinting method on tumour cells to understand how a particular class of drug agent works and can be used for a specific subgroup of cancer patients. These types of studies pave the way for so called personalised therapies.

## Unit

**Mark Waltham**

Harrison Odgers

Walter Pfister

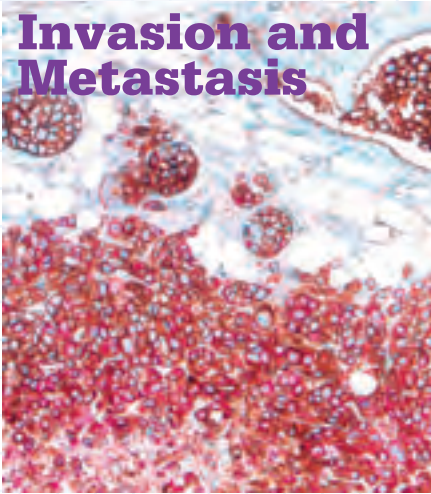
Mina Rizk

Timothy Tan

Sam Rudstein



## Invasion and Metastasis



**Work in the Invasion and Metastasis Unit focuses on finding ways to halt the spread of cancer to other parts of the body.**

## Epithelial Mesenchymal Plasticity (EMP) in Breast Cancer

Circulating (CTC) and disseminated (DTC) tumour cells are found in the blood stream and bone marrow, respectively, of many cancer patients, but particularly breast cancer. CTC and DTC have prognostic importance and are thought to give rise to metastasis and recurrence. EMP is defined as a spectrum of changes in the shape, behaviour and motility of cells relating to embryonic development. There is increasing evidence that EMP is involved in breast cancer metastasis, and that it also defines the breast cancer stem cells that resist current therapies. We aim to determine the role of EMP in CTC and DTC and, in conjunction with the NCBF-funded EMPathy Breast Cancer Network (<http://www.empathybcn.org>), identify new EMP-related diagnostic, prognostic and therapeutic targets for breast cancer.

## MMP13 – A key enzyme in breast cancer growth and spread

The protease MMP13 is upregulated in breast cancer and involved in the bone remodelling associated with breast cancer metastasis to bone. We have shown that a prototype MMP13 inhibitor from Pfizer delays both the growth of the primary tumour and the onset of associated bone lesions in breast cancer models. Studies in MMP13 knockout mice have confirmed that at least some of the MMP13 is from the tumour microenvironment, since both the primary growth and bone colonisation is reduced. We also found that MMP13 may be involved in the processes associated with angiogenesis.



Newly improved methods available in the Invasion and Metastasis Unit in 2011 mean that researcher Bryce van Denderen is able to study the genes that are active in the spreading cancer cells of patients with advanced breast cancer. These will help him to identify how and where some breast cancer cells 'hide out', evading treatment, and eventually seeding new cancer growths. With this knowledge in hand, the researchers in the group hope ultimately to be able to reduce the number of deaths from breast cancer, which kills around 2,000 Australian women each year.

## Unit

### **Erik (Rik) Thompson**

Tony Blick

Grace Chew

Devika Gunasinghe

Annet Hammacher

Dexing Huang

Honor Hugo

Cletus Pinto

Manisha Shah

Eliza Soo

Anthony Tachtsidis

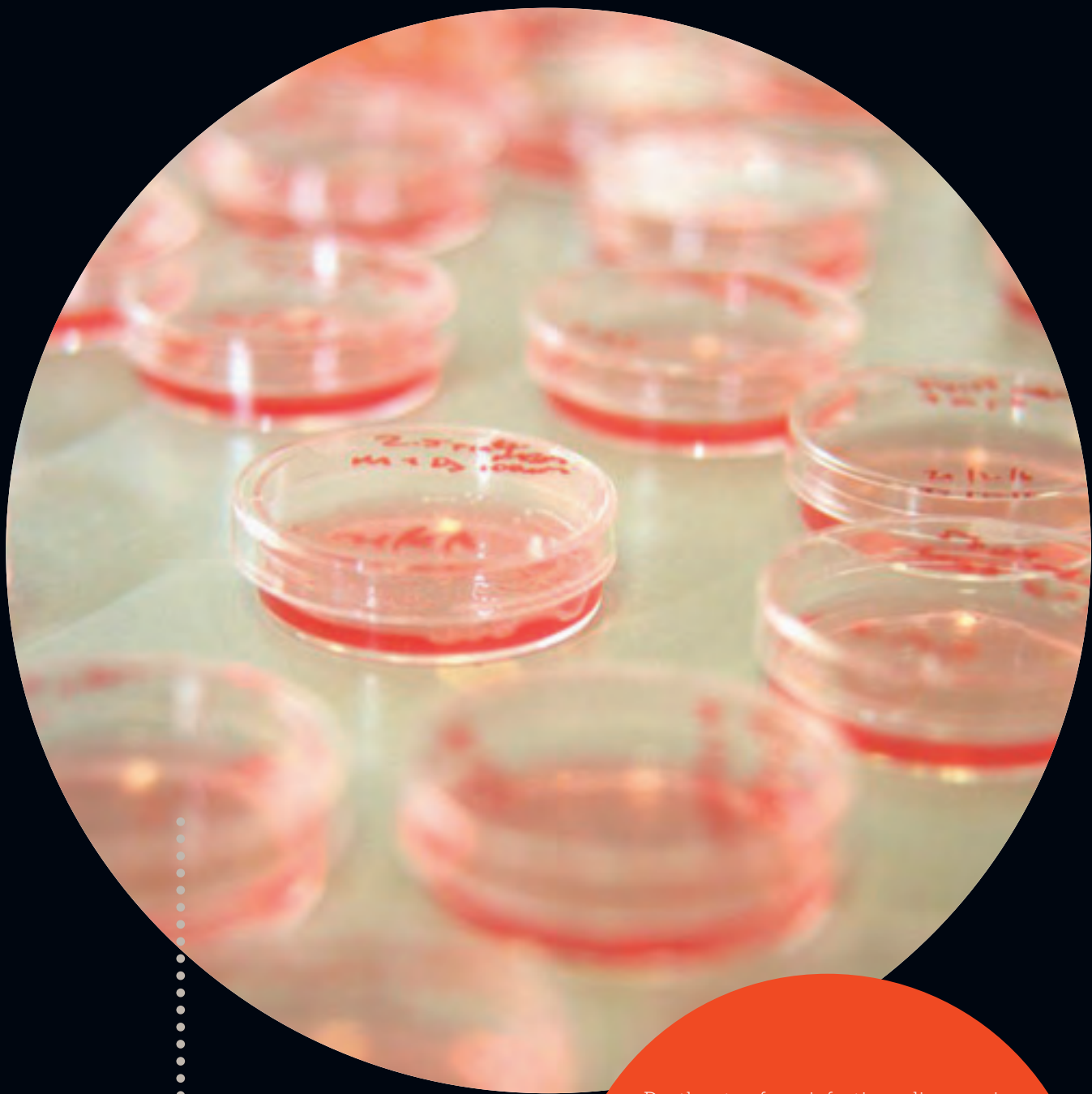
Eva Tomaskovic-Crook

Bryce van Denderen

Edwin Widodo

Victor Rotarou





The National Serology Reference Laboratory (NRL) was established in 1985 as part of the Australian Government's HIV/AIDS Strategy, to evaluate HIV tests and adjudicate on the interpretation of HIV test results. The goal of the NRL is to support laboratories, in Australia and internationally, that perform testing for the diagnosis and management of human infectious disease.

Death rates from infectious diseases in Australia fell from 185 per 100,000 population in 1921 to six in 1995. As a proportion of all deaths, infectious diseases declined from 19% in 1921 to 1% in 1995. The decline in deaths from infectious diseases has been attributed to a range of social and demographic changes, public health measures and medical advances.

# INFECTIOUS DISEASE

INFECTIOUS DISEASES WERE A PROMINENT CAUSE OF DEATH IN AUSTRALIA...

**Infectious diseases were a prominent cause of death in Australia from the time of European settlement until the second half of the 20th century.**

**Infectious diseases range in severity from minor conditions such as the common cold, to serious illnesses such as hepatitis and AIDS, which may result in death. Death rates from infectious disease dropped dramatically over the last century, however, preventable deaths still occur in this country, particularly in indigenous Australians.**

**In addition, many of Australia's neighbours, such as Papua New Guinea, still have high numbers of preventable deaths each year.**





### **HTLV-1 Diagnosis**

There are an estimated 15 to 20 million people infected with HTLV-I world wide, including in Australia where HTLV-1 is endemic in our Central Australian indigenous communities. The cosmopolitan strains of HTLV-I from Japan, the Caribbean, the Americas and Africa demonstrate a low degree of genetic variation (0.5 to 3%). However, the Australo-Melanesian variant of HTLV-1 found in Papua New Guinea, the Solomon Islands and Australia demonstrates a highly divergent sequence, exhibiting only 92% sequence identity to the other known HTLV-1 strains. There is concern that the large sequence variation between the Australian HTLV-1 isolates and the prototype virus used in the manufacture of commercial HTLV-1 assays may result in decreased sensitivity or indeed a complete lack of detection of this virus in individuals infected with the Australo-Melanesian strain.

NRL is currently developing a real-time HTLV proviral load assay based on sequences obtained from locally sourced samples. We are also establishing an immortalised cell line harbouring the proviral DNA obtained from individuals infected with the Australo-Melanesian variant. The cells will be used to produce viral lysates that will form the basis of an “in-house” Western blot.

These assays will allow a definitive diagnosis to be made in samples from individuals infected with this variant, where the currently available diagnostic test produced indeterminate or discordant results because the divergent antigens or nucleic acid are not recognised.

### **WHO HIV Treatment 2.0**

The Vietnam Ministry of Health (MOH) is facilitating the implementation of the World Health Organisation (WHO) HIV Treatment 2.0 program, by initiating a pilot study in two provinces. HIV Treatment 2.0 seeks to simplify the way HIV treatment is provided and to scale up access to life-saving medicines. One of the pillars of the Treatment 2.0 program is to provide point of care (POC) HIV diagnosis. In Vietnam an algorithm will be used where HIV antibody screening and confirmatory testing is performed using rapid tests.

The Vietnam office of WHO (WHO VN) has sought NRL’s advice about the implementation of HIV Treatment 2.0 and assistance with training programs for the people involved. In July, WHO VN invited NRL’s Director, Sue Best, to Vietnam to meet with stakeholders to help develop a plan for the HIV Treatment 2.0 pilot study.

Subsequently, in November, WHO VN invited NRL to return to conduct the trainer program in Vietnam and to generate the training materials required to train staff in primary health care centers conducting HIV confirmatory testing on site. During this visit, Kim Wilson (NRL) facilitated the development of the framework under which the testing will be conducted, developed the training curriculum, the training materials, the standard operating procedures and other related documents. Once implemented, NRL will provide technical support as necessary.

2011 saw the first year of funding for an NHMRC Project Grant held jointly by Lloyd Einsiedel from Flinders Medical Centre in South Australia and the NRL's Kim Wilson. The researchers are investigating the effects of a type of virus called human T-lymphotropic virus I (HTLV-I) in Australia's indigenous population. HTLV-I infection is very high among the indigenous peoples of Central Australia and infection is linked with a number of serious diseases, including leukaemia. The researchers are looking specifically at the role of the virus in contributing to bronchiectasis, a type of obstructive lung disease, which is a major contributor to poor health outcomes in our indigenous population.

## Unit

### **Susan Best**

Nilukshi Arachchi  
Lena Arvanitis  
Thein Thein Aye  
Penny Buxton  
Liza Cabuang  
Jing Jing Cai  
Roderick Chappel  
Stirling Dick  
Wayne Dimech  
Cathy Dunkley  
Stephen Gilmour  
Helen Hasler  
Marina Karakaltsas  
Geraldine Kong  
Sally Land  
Mark Lanigan  
Tamara Mc Donald  
Geline Narekine  
Alison Natoli  
Louie Opasinov  
Susie Noppert  
Thu-Anh Pham  
Kim Richards  
Terri Sahin  
Kathy Smeh  
John Tomasov  
Frank Torzillo  
Rosanna Torzillo  
Joe Vincini  
Robert Vinoya  
Sandy Walker  
Kim Wilson



# 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, structural biology, biochemistry, immunology and cell signalling, as well as clinical research into diseases including cancer, diabetes and bone disease.

## 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, BBQs, ice skating, trivia nights, movie evenings and the Postgraduate Ball. The annual Student Retreat provides great educational and social opportunities for students. See the student society page at <http://www.medstv.unimelb.edu.au/StudentSociety/StudentSociety.html> for more details.

## 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. Prospective students should contact

the leaders of the individual research groups to discuss potential projects. See [http://www.svi.edu.au/students/phd\\_and\\_honours\\_projects/](http://www.svi.edu.au/students/phd_and_honours_projects/) for more details.

## SVI Honours Programs

More information: A/Prof Louise Purton, Student Coordinator, SVI

Tel: 9288 2480 or email: [enquiries@svi.edu.au](mailto:enquiries@svi.edu.au)

[www.medstv.unimelb.edu.au/info/honours.html](http://www.medstv.unimelb.edu.au/info/honours.html)

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](http://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. Prospective students should contact the leaders of the individual

research groups to discuss potential projects. See [http://www.svi.edu.au/students/phd\\_and\\_honours\\_projects/](http://www.svi.edu.au/students/phd_and_honours_projects/) for more details.

## SVI PhD Programs

More information: A/Prof Louise Purton, Student Coordinator, SVI

Tel: 9288 2480 or email: [enquiries@svi.edu.au](mailto:enquiries@svi.edu.au)

## External Scholarships

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)

NHMRC Biomedical Postgraduate Research Scholarships

## SVI PhD & Honours Student Awards

Students commencing full-time 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: SVI Foundation Student Awards Coordinator

Tel: 9288 2480 or email: [enquiries@svi.edu.au](mailto:enquiries@svi.edu.au)

PhD applications due: 31 December each year

Honours applications due: 31 December each year





**Congratulations to the students who were recipients of SVI Foundation Student Awards in 2011, sponsored by the SVI Support Group and the SVI 1000 Club:**

- Anthonium Tan (Honours)
- Allison Irvin (Honours)
- Edward Chu (Honours)
- Chen Gao (PhD)
- Alvin Ng (PhD)
- Suang Suang Koid (PhD)

**1st year PhD student**

Suang Suang Koid, supervised by Associate Professor Jock Campbell

I am from Malaysia, and I remember feeling intrigued in classes at high school when we were taught about how the biological systems in the body work. When I came to Melbourne to do my undergraduate studies, I chose to major in biomedical science. After I finished my undergraduate degree I worked for three years as a tutor at the Department of Pharmacology, The University of Melbourne. I found it very fulfilling teaching undergraduate students about research. The question I was asked most commonly in those three years was what it was like to do research. After a while, I could not resist returning to research! I started my PhD with Jock Campbell in April 2011. My PhD project focuses on the potential of a drug called Aliskiren for the prevention and treatment of cardiovascular diseases. I know there is a lot of hard work ahead of me, but I think this challenging project is really exciting because it has genuine potential to improve patient quality-of-life.

**2nd year PhD student**

Farzin Takyar, supervised by Associate Professor Natalie Sims and Professor Jack Martin

I did my medical degree at Tehran University of Medical Sciences in Iran and while I worked as an assistant physician for a number of years after that, I couldn't let go of my interest in medical research. It is difficult to do research in Iran because there hasn't been any considerable investment in infrastructure since the 1970s: for this reason most people go overseas. In fact, of my class of 180 people, only about 20 remain in Iran. And people talk about the Australian brain drain! I have been interested in bone development and disease since studying it during my medical degree, and I consider myself very lucky to have found a place in the Bone Biology and Disease Unit, working with Natalie and Jack Martin. I plan to go on to do a postdoc in the U.S. and hope one day to be able to return to Iran, where my parents are still living, and be able to work as a clinician-researcher there, maintaining the links that I have developed in Australia.

**3rd year PhD student**

Hayley O'Neill, supervised by Associate Professor Greg Steinberg and Professor Bruce Kemp

I have always played a lot of sport and have been interested in metabolism and exercise, so I jumped at the opportunity to do Honours in the Protein Metabolism and Chemistry Unit with Greg Steinberg, looking at the effects of an enzyme called AMP-activated protein kinase (AMPK) on insulin sensitivity in mice. That naturally progressed on to a PhD, and when Greg moved back to McMaster University in Ontario in the first year of my PhD I decided to go along with him to continue my studies. It was a steep learning curve and living overseas wasn't as easy as I thought it was going to be, but it was a very valuable experience that most researchers wouldn't have until they started their postdoc. I made some exciting discoveries about the role of AMPK in regulating metabolism in muscles, which has important implications for our efforts to curb the effects of obesity and type 2 diabetes. I hope to be finished writing my thesis in July and then I plan to go overseas again to do a postdoc. I am not sure where that will be, but it will definitely be somewhere warmer than Ontario, where it got to minus 30 in the depths of winter!



# SVI Director and Chair Report

You will read in this Annual Report about our very significant success in the 2011 round of grants from the NHMRC. This was by any measure our most successful funding year to date. We credit our people, our technology and our support for this success.

Above all you will read in this Annual Report that successful medical research depends on finding the right people. Perhaps the most rewarding statistic in our funding results was that half of the grants SVI received were awarded to scientists who have been at SVI for less than 5 years. These include Dr Andrew Deans who returned to Australia in 2011 after 5 years at Cancer Research UK laboratories. Science attracts altruistic, passionate and talented young people prepared for challenge. This is one of the nation's most highly educated work forces and the health sector remains a very desirable career choice for school leavers. It is very important for us to ensure adequate career opportunities and structures exist for researchers.

This is not always the case and research career opportunities for women, clinicians, highly skilled technical specialists and mathematicians interested in biology need particular attention.

Achieving this high rate of grant success requires enormous effort by scientists and by our research Grants Office and is very time consuming. The cycle for application and review for NHMRC funding takes up virtually the entire year. Grant writing begins before Christmas for submission in March. Reviewing extends from April to September and the writing begins again. Apart from being an essential mechanism to bring in funds, grant writing is essential for planning. But it is possible that this may be taking up too much time to the detriment of our scientists' ability to carry out other important functions including clinical application of their findings and pharmaceutical and biotech applications.

A high level of focus on NHMRC funding means that we are reliant on government sources for most of our income. It is not ideal to be overly dependent on a single source of funds and diversification makes sense. The global financial crisis has resulted in flat or reduced government spending in most countries. In the context of even modest increases in costs, flat funding means shrinking real dollars for research. Therefore we either need to convince governments to spend more money despite the economic climate or we need to be better at finding other sources of income – or both. We are very grateful for the philanthropic contributions made by our supporters.

In other countries there is non-Government support from major charities that is of a similar scale to Government support, but in Australia philanthropy is more fragmented and generally of a smaller scale. In the UK, for example, there is the Wellcome Trust (with a corpus in excess of 10 billion pounds) and in the US major charities include the Howard Hughes Foundation and the Bill and Melinda Gates Foundation. These Foundations have rigorous processes and strong governance. Would it be feasible to establish an Australian philanthropic medical research funding body with the scale of the Wellcome Foundation and the Gates Foundation to complement Government support?

The issues above – careers, the grant system and opportunities for new sources of funding are some of the issues being addressed by the McKeon Review of Health and Medical Research, which is currently underway. We recognize the current constraints on government spending. But we also believe very strongly in the international competitiveness of Australian medical research and the importance of medical research to our health and the potential of medical research to contribute to employment and new manufacturing solutions. We will be presenting our ideas to the Review in the hope that it will set a positive direction for medical research.

As well as focusing on young researchers, we have outstanding older scientists at SVI. Ora Bernard retired at the end of 2011 after a remarkable lifetime in research, ranging from her work alongside Nobel Prize-winner Susumu Tonegawa in Switzerland in the 1970's to a long career at The Walter and Eliza Hall Institute before coming to SVI in 2008. She has had a great impact at SVI, especially as a senior mentor to many.

We thank all of our supporters for assistance. It is vital to our success. This includes both State and Federal Governments, especially for provision of vital help with costs of running SVI through the Operational Infrastructure Support Scheme and the Independent Research Institutes Infrastructure Support Scheme. We thank the SVI Foundation for its fund-raising and the SVI Board for their guidance. Mr John Pizzey retired as a Director in 2011 and we thank him for his wisdom and support. We also thank St Vincent's Hospital, Melbourne, the Sisters of Charity and the Trustees of the Mary Aikenhead Ministries for their ongoing support.



BM Shanahan  
Chair



TWH Kay  
SVI Director

“Perhaps the most rewarding statistic in our funding results was that half of the grants SVI received were awarded to scientists who have been at SVI for less than 5 years.”



# 2011 Highlights

## May

SVI hosted its annual Forum in May, focused on Cancer Prevention, chaired by Sir Gustav Nossal and with speakers including Todd Harper, CEO of the Cancer Council Victoria, Simon McKeon, Australian of the Year, Dr Clara Gaff, Principal Development Manager of the Victorian Comprehensive Cancer Centre and Jörg Heierhorst, SVI cancer researcher.



## April

Rumoured cuts to the NHMRC budget had a surprisingly positive effect: increasing the awareness of the importance of medical research in the wider community and acting as a catalyst for an unprecedented display of support, culminating in thousands of Australians attending 'Rallies for Research' throughout Australia in April.



**June**

Collingwood and St Kilda clashed in a match at the MCG on the 4th of June, helping to raise \$50,000 for Juvenile Diabetes. The Institute's fourth Discovery Day was sponsored by Watersun Homes and Barry Plant Real Estate and the evening saw some passionate fans supporting both their team and SVI. Thank you to the sponsors and to the Committee: Brian Cooney (Chair), Brian Cooney (Chair), Benni Aroni, Jim Hatzimoisis, Christine Collins, Jeni Coutts, Suzan Morlacci, Bruce Guthrie, Clare Lacey and Misty Warren (CFC).





## July

Three hundred SVI supporters joined together in the beautiful Myer Mural Hall on the 21st July to hear about the importance of medical research in the fight against type 1 diabetes. The Hon Tony Abbott spoke of the importance of philanthropy in helping to support initiatives such as SVI's Childhood Diabetes Appeal. Thanks to Sue Alberti and her staff for their support of this event.

A number of other politicians visited the Institute in 2011, including Louise Asher MLA, Minister for Innovation, Services and Small Business, Anna Burke MP, Federal Member for Chisholm, Richard Wynne MP, State Member for Richmond and Julie Bishop



MP, Deputy Leader of the Opposition, shown here with SVI researcher Associate Professor Helen Thomas.

## August

SVI's Dr Jon Oakhill, Professor Bruce Kemp and colleagues published a paper in the prestigious journal *Science* in August. The article described a new paradigm for the activation of the protein AMP kinase, which could have implications for the treatment of diseases such as type 2 diabetes. Bruce has devoted a large part of his career to the investigation of AMP kinase and notably, the paper was Bruce's eighth in the journal: a remarkable achievement. In the same month, Dr Andrew Deans joined the Institute, to head the Institute's new Genome Stability Unit.



## October

The results of NHMRC grants were announced in October, with SVI researchers achieving a 54.3% success rate, compared to the national rate of 24.8%. This was the second highest success rate nationally. It was also announced that Professor Tom Kay and Associate Professor Helen Thomas – together with colleagues from the Walter and Eliza Hall Institute, Sydney's Westmead Millenium Institute and the Western Australian Institute of Medical Research – had been awarded a NHMRC Program Grant of \$10.2 million to help them find new ways of halting type 1 diabetes.

Professor Michael Parker was awarded the prestigious Ramaciotti Medal for Excellence in Biomedical Research and a \$50,000 grant, recognizing the major advances his work has made in the field of protein crystallography. This was followed up by the announcement that Michael, along with Associate Professor Louise Purton and Dr Carl Walkley, had been awarded \$2 million by the ACRF to help them develop new treatments for cancer.



The SVI Support Group, chaired by Claire O'Callaghan, capped off their 22nd year by hosting a dinner for nearly 200 guests at the Athenaeum Club and raising \$35,000 for the SVI student scholarship fund. Generous contributions from SVI supporters allow SVI to offer student scholarships to the best and brightest Honours and PhD students.

SVI's fourth Annual Charity Golf Day at the Albert Park Golf Course, sponsored by Newcrest Mining, raised a record \$107,000 in support of heart disease research at SVI. With more than 120 players, golfers enjoyed perfect weather on the green, followed by oyster shucking, Grange Hermitage wine tasting and dinner at Lago Restaurant, overlooking the course. SVI would like to thank the Golf Committee, chaired by the late Michael Dwyer, along with Leon Wiegard, Michael Kay, Mark Kerr, Barry Holbrook, Charlie Happell and Clare Lacey, who worked tirelessly throughout the year to ensure the success of the event.



# SVI Board of Directors

## Ms Brenda M Shanahan

BEc BComm  
Chair, SVI Board

Ms Shanahan has a research background in finance in Australian and overseas economies and share markets. She is Chair of Challenger Listed Investments and a non-Executive Director of Clinuvil Pharmaceuticals Ltd; DMP Asset Management Ltd and Kimberley Foundation of Australia Ltd. She is a former Chairman of St. Vincent's Health Ltd, former member of the Australian Stock Exchange, and former Executive Director of a stockbroking firm, a fund management company and an actuarial company.

## Susan Alberti

AO, MAICD

Ms 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. Ms Alberti is Chair of the SVI Foundation, Victoria University Foundation Board member and also a Board member of the Western Bulldogs and Co-Chair of the Western Bulldogs Forever Foundation.

## Mr Paul Holyoake

BEngMech (Hons) MEngSci

Mr Holyoake is currently Executive Chairman, Oakton Limited, an ASX listed, information technology services company.

From June 1988 to June 2005, Mr Holyoake was Managing Director and Chief Executive Officer, Oakton Limited.

## Professor Thomas WH Kay

BMedSc MBBS PhD Melb FRACP FRCPA

Professor Kay is Director of SVI. He holds a Professorial appointment within the Department of Medicine, St. Vincent's Hospital and The University of Melbourne. He also holds the position of Honorary Endocrinologist at St. Vincent's Hospital. Professor Kay's research interests are in the area of autoimmunity, particularly of type 1 (juvenile) diabetes.

## Mr John T Macfarlane

MComm

Mr Macfarlane is Chairman of Deutsche Bank Group, Australia & New Zealand following seven years as President & CEO of Deutsche Bank, Japan. An 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 of the NZFE; member of the Global 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

MBBS, B Med Sci, MD, FRACP, FRCPA

Until January 2011

Professor McCluskey is the Deputy Vice-Chancellor (Research) at the University of Melbourne and past Head, Department of Microbiology and Immunology at The University of Melbourne. He is also a Consultant Immunologist to the Victorian Transplantation and Immunogenetics Service, Australian Red Cross Blood Service.

## Mr Stephen G Marks

FCA

From October 2011

Mr Marks is the Managing Director of Stephen G.Marks & Co. Pty. Ltd. He is a Fellow of the Institute of Chartered Accountants and a Fellow of The Institute of Company Directors in Australia. He was formerly Chairman of the Sothertons Chartered Accountants National Board and Managing Partner of the Melbourne office. He has recently retired as the Director of Probity Services for RSM Bird Cameron. He is a member of the Audit Committee of Orygen Youth Health and the Investment Advisory Committee of DMP Asset Management Ltd.

## Mr Michael McGinniss

BComm (Hons) MEd

Mr McGinniss retired from a senior position as a partner with PricewaterhouseCoopers, Chartered Accountants in 2000. 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.

## Professor Patricia O'Rourke

RN, Grad Dip App Sc (Nursing), GAICD

Professor O'Rourke was appointed St. Vincent's Hospital Chief Executive Officer in April 2009. She has more than 20 years experience in the healthcare industry, including nursing and senior management roles. In her previous role as Chief of Clinical Operations and Chief Nursing Officer at St. Vincent's Hospital her duties included leading regional and national projects, representing St. Vincent's on a number of Department of Human Services committees, providing strategic and operational advice to the CEO and clinical leadership to the Executive. Until October 2008 she was a member of the Board of Southern Health.





**Ms Ruth O'Shannassy**

BComm

Ms O'Shannassy worked in economic research in the finance industry in Melbourne before moving overseas. She spent seven years living and working offshore, primarily as a stockbroker in London and Asia before returning to Australia.

Ms O'Shannassy is a Board member of the Victorian Prostate Cancer Research Consortium.

**Mr Christopher Page**

BA

From October 2011

Mr Page has been a career banker for almost 40 years. His most recent role was as Chief Risk Officer for ANZ. Prior to that he spent 34 years with HSBC. From 2005 to 2007 Mr Page was also Chairman of the British Chamber of Commerce in Hong Kong. He established his consultancy business, Earnest Knight and Company Pty Ltd in January 2012. In addition to his role on the Board of SVI, he also is on the Board of a number of ANZ's partnership banks in Asia.

**Mr John Pizzey**

BE(Chem) Fell Dip (Management)  
FTSE FAICD FAIM  
Until November 2011

Mr Pizzey retired from Alcoa in December 2003 where he was Executive Vice President of Alcoa Inc (USA) and Group President, Primary Products. He was Chairman of the London Metal Exchange Ltd (UK) in 2003. Mr Pizzey is currently a Director of Alumina Ltd, Amcor Ltd and Iluka Resources Ltd. He is also a member of the Board of Governors at Ivanhoe Grammar School.

**Mr Gregory Robinson**

BSc(Hons) MBA (Columbia)

Mr Robinson was appointed Managing Director and Chief Executive Officer of Newcrest Mining Limited in July 2011 following almost 5 years as the company's Director of Finance, responsible for the Group's finance function, 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. He was also a member of the Energy Executive Committee and Group Executive Committee. Before joining BHP Billiton, Mr Robinson was Director of Investment Banking at Merrill Lynch & Co and headed the Asia Pacific Metals and Mining Group.

**Professor James Best**

MBBS, MD, FRACP, FRCPath, FRCP Edin,  
MD (Hon, St Andrews)  
From May 2011

Professor Best is Professor of Medicine and Head of the Melbourne Medical School at the University of Melbourne. He is Chair of Australia's National Health and Medical Research Council (NHMRC) Research Committee and a member of the Council. Professor Best is a member of the National Heart Foundation Research Committee, Chair of the Victorian Prostate Cancer Research Consortium and the Victorian Medical Insurance Agency, and inaugural Chair of the Steering Committee of the Australian Type 1 Diabetes Clinical Research Network. Professor Best has previously been a Board Member of three different metropolitan health services in Melbourne, including St Vincent's Health.



# SVI Foundation Chair Report

The SVI Foundation is proud to support research at SVI into common diseases that affect all Australians. The 18 Foundation Board members each played a significant role in our fundraising efforts in 2011, for which I, as Chair, am very grateful.

One of the key goals of the Foundation is to educate the public about the benefits of medical research. Institute staff and students have embraced the opportunity to share their interest in science through our program of bringing the community to the Institute – donors, bequestors, corporate representatives, state and federal government Ministers and school groups.

In February 2011 we welcomed Madeleine Whiting as our new Director of Development for the Foundation. The fundraising team and board members were kept very busy during the year with Foundation events and internal dinner tours of the Institute. These tours enable our scientists to share their knowledge with guests over a meal and provide guests with an opportunity to learn more about SVI research.

Some of the highlights of 2011 were the luncheon for \$10,000 Discovery Fund members and friends hosted by Sam and Christine Tarascio. The \$10,000 Discovery Fund was established with the aim of encouraging 100 donors to invest \$10,000 per year for five years to raise \$5 million to support research at SVI. I congratulate Christine on the success of the Fund, which continues with the addition of several new members in the last 12 months.

In July I hosted The Hon Tony Abbott as guest speaker at a Luncheon for 300 at the Myer Mural Hall. Tony Abbott

has a long-standing interest in medical research, having been the Health Minister who announced the funding of the Islet Transplant Program. Three of our Islet Transplant recipients attended the luncheon, and Professor Tom Kay talked about the collaboration involved in the project across the whole St. Vincent's Campus.

Other events included the SVI Discovery Day AFL match between Collingwood and St Kilda at the MCG in June, sponsored by Watersun Homes and Barry Plant Real Estate, which raised more than \$50,000 for research into juvenile diabetes; The Newcrest Mining SVI Charity Golf Day saw many companies come together to compete for the Jack Holt Trophy and raise \$107,000 for heart disease research. The Susan Alberti Charitable Foundation Signature Ball entertained 600 people and raised \$300,000 to help support the Islet Transplant Program at SVI.

In October the 22nd annual black tie Athenaeum dinner, hosted by Claire O'Callaghan and her SVI Support Group, culminated in the announcement of support for two PhD students via funds raised at the dinner.

The year ended on a high note with a luncheon in the Myer Holdings boardroom, hosted by the Chairman of Myer, Howard McDonald.

Giving in celebration and giving in memory gifts had a large impact on our fundraising in 2011. Ricky and Amanda Smorgon's daughter Isabella, aged 12, had guests at her Bat Mitzvah give donations to SVI in lieu of gifts. In this way she raised \$7,500 towards the fund set up in memory of her late grandmother Roslyn Smorgon. A gift to SVI has the potential to make an enormous difference to the lives of many and we are very grateful to all those who supported Isabella.

Corporate partnerships are another way to support the Institute. Edgewise Insurance has made SVI one of their preferred charities: SVI receives commissions from specific Edgewise Insurance policies, which totalled \$13,000 in 2011.

A number of new pieces of equipment are now available to researchers at SVI and the wider community thanks to generous donations from SVI supporters and from other Trusts and Foundations. This includes equipment that will be used to investigate the causes of Alzheimer's disease, to measure changes in bone cell behaviour in diseases such as osteoporosis and arthritis, and to help detect cancer metastasis in animal models of bone cancer.

SVI relies on the support of individuals, corporations, government and the community. I would like to take this opportunity to thank all of our supporters, loyal donors, particularly members of the \$10,000 Discovery Fund, the 1000 Club, and of course my fellow Foundation Board members and SVI staff for their dedication to the cause, helping to offer hope to all those in the community who have been touched by disease.

God bless,



Susan Alberti AO, MAICD  
SVI Foundation Chair



# SVI \$10,000 Discovery Fund

**An investment in the SVI \$10,000 Discovery Fund is an investment in the health of Australians.**

The SVI \$10,000 Discovery Fund aims to accumulate a minimum of \$5 million of capital, the income from which will be used to support vital research at SVI. Members of the Fund are kept abreast of new developments in research and are given opportunities to meet other members at exclusive events held throughout each year.

If you are interested in joining the Fund, please contact Christine Tarascio on 0418 318 627.

**\$10,000 Discovery Fund Members**

- Alberti AO, MAICD, S
- Anonymous
- Brenda Shanahan Charitable Foundation
- Briggs, GW
- Burgess, A & J
- Caribbean Gardens Pty Ltd
- Ceravolo, E
- Costa Family Foundation
- Foti, M
- Gold Age Pty Ltd
- Joe Arcaro Architects
- Macfarlane, J
- McDonald, HJ
- North, C
- Plant, B & K
- Portsea Hotel
- Schiavello Group Pty Ltd
- SI Capital Pty Ltd
- Simpson Family Foundation
- Tarascio, S & C
- Tarascio, S & C
- Zagame Corporation

Image: In recognition of support from \$10,000 Discovery Fund members, a luncheon was held in February at the home of Christine and Sam Tarascio, where 50 guests were treated to a banquet by Atlantic Catering and a talk from A/Prof Louise Purton (co-head of the Stem Cell Regulation Unit). The lunch, which was proudly sponsored by Salta Properties, saw the announcement that the Fund has now reached the \$1 million mark. Thanks to Christine Tarascio, Chair of the Fund, and her committee: Maria Foti, Jan Spooner, Andrew Henderson, Tony Burgess, Brenda Shanahan and Clare Lacey.



# SVI Foundation Board

## Susan Alberti AO, MAICD

Chair, SVI Foundation Board

Ms Alberti AO 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. She is an SVI Board Member, Victoria University Foundation Board member and also the Patron and Board member of the Western Bulldogs and Co-Chair of the Western Bulldogs Forever Foundation.

## Mr Benni Aroni

Co-Vice Chair, SVI Foundation Board

Mr Aroni is a qualified legal practitioner having been the 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 chairs Stralliance Developments, a property development and construction group. He was Vice President of JDRF Victoria between 1993 and 1998 and National Vice President from 1995. Subsequently he has focused his charity work on the SVI Foundation. He is and has been a Board member of several companies, listed and unlisted.

## Mr Anthony Burgess

Co-Vice Chair, SVI Foundation Board

Mr Burgess is Chief Executive Officer of Flagstaff Partners, an independent corporate finance advisory firm based in Melbourne. He has 30 years experience in corporate

finance in Melbourne, London, and New York, and has advised on many major M&A and ECM transactions. Mr Burgess holds an MBA (with Distinction) from Harvard Business School (1985) and a Bachelor of Commerce (with First Class Honours) from the University of Melbourne (1981). He is a member of CPA Australia and the Financial Services Institute of Australia. He is a Director of the listed investment company, Diversified United Investments Limited, and is a member of the Advisory Board to the Faculty of Business and Economics, University of Melbourne.

## Ms Simone Carson

Ms Carson helped to found a dynamic not-for-profit called SecondBite 5 years ago. She remains on the Board of SecondBite with a special interest in volunteers and the relationships between Donors and Recipients. She is a member of AICD having completed a Company Directors' Course in 2009. After leaving school Simone completed her Nursing training at The Royal Children's Hospital, gained a certificate in Paediatric Intensive Care and a Bachelor of Education at La Trobe University. Apart from her work in PICU at RCH, she also undertook part-time work helping to co-ordinate a research project for the Infectious Diseases Department.

## Mr Brian Cooney

Mr Cooney is a leading member of the Australian sports marketing industry. Specialising in sponsorship and event management, Mr Cooney has been responsible for some of the biggest commercial arrangements in Australian sport. As Senior Vice President of the world's largest sports marketing company, IMG, he has vast experience in dealing with senior figures from Government and corporate Australia.

## Ms Jeni Coutts

Prior to starting her own Corporate Affairs consultancy in 2003, Ms Coutts held senior positions in Corporate Affairs with some of Australia's leading corporations including Transurban, Siemens, Hoechst and CitiPower. Her experience is wide ranging and has covered all facets of corporate affairs from issues, crisis and media management through to Government, Stakeholder, Community and Investor Relations. She holds degrees in Public Relations/Politics and Law.

## Mrs Maria Foti

During the past 20 years Mrs Foti has been the co-founder and Managing Director of National Educational Advancement Programs (Neap) Pty Ltd and its associated companies. Neap is an education services provider and educational publisher to the senior secondary school market. With a background in teaching and design, she has also been involved in a number of family-owned businesses, most notably owning, operating and designing garments for a wholesale ladies' high fashion label and boutique.

## Mr Bruce Guthrie

Mr Guthrie has been a journalist and editor for more than 35 years, occupying some of the most senior positions in the Australian print media in that time. He has edited both of Melbourne's major daily newspapers, The Age and the Herald Sun, and co-founded then later edited The Sunday Age. He has been a reporter and writer in Australia and the United States, a regular commentator and broadcaster on 774ABC and is the author of a memoir, Man Bites Murdoch. Mr Guthrie has also worked in senior positions in the magazine industry here and abroad. His publications have won prestigious PANPA Newspaper of the Year and MPA Magazine of the Year awards. Educated at La Trobe University and RMIT, he is married with two teenage children and lives in the Melbourne suburb of Hawthorn.

## Mr James Hatzimoisis

Mr Hatzimoisis is a Licensed Estate Agent and Accredited Auctioneer. He is a Director of 8 Offices within the Barry Plant Real Estate Network and has been instrumental in the growth of the Network particularly throughout Melbourne's Western Suburbs. His primary focus is training, mentoring and skill development of Sales Teams within the group. Outside of work, his interests include conducting many Charity Auction events annually; he has been actively involved with the Bluey Day Foundation, Convoy For Kids, the MS Society and most schools in Melbourne's Western suburbs and is a foundation Shareholder of the Melbourne Victory Football Club.



**Professor Thomas WH Kay**

Professor Kay is Director of SVI. He holds a Professorial appointment within the Department of Medicine, St. Vincent's Hospital and The University of Melbourne. He also holds the position of Honorary Endocrinologist at St. Vincent's Hospital. Professor Kay's research interests are in the area of autoimmunity, particularly of type 1 (juvenile) diabetes.

**Ms Suzan Morlacci**

Ms Morlacci has spent the better part of her life involved in her family business. She has put her hand and mind to all aspects of the business from Concrete Batching to Shipping. She currently manages the Credit and Personnel departments of the business. Ms Morlacci has managed to find time to not only attain a diploma as a Spa Therapist and a degree in the Arts Legal Studies, but is also involved in event management, fundraising activities. During 2008, prior to becoming a board member of SVI Foundation, she was a committee member of YSVI. She has experienced first hand the miracles that the specialists and doctors of St. Vincent's Hospital can achieve.

**Mrs Claire O'Callaghan**

Chair, SVI Support Group

A St. Vincent's Hospital 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.

**Mrs Karen Plant**

Co-Vice Chair, SVI Foundation Board

Mrs Plant is a qualified interior decorator. With her husband, she helped establish Barry Plant Real Estate which has over 70 offices throughout Victoria and Southern Queensland. They also ran their own construction company Birchbank Homes. Her foray into charity work was the refurbishing of the cancer ward at The Royal Children's Hospital. She is a board member of The Deakin Foundation, for Deakin University, as well as a member of the REIV Charity Foundation Board. She enjoys family life with her husband Barry and children Nicholas and Ayleisha.

**Mr Peter Riley**

Mr Riley was a Senior Partner/Executive Director in the Tax Consulting Division of Pitcher Partners Melbourne for approximately 19 years until 30 June 2010. In that role he had considerable experience in advising high wealth individuals, their families and their businesses, on investing in and outside of Australia, specialising in taxation and business advisory issues in relation to property development, corporate advisory, funds management, high wealth families and estate planning. He has current and past appointments with a number of professional bodies. On 1 July 2010 Peter founded Alandal Consulting Pty Ltd, a boutique firm advising high wealth families and their business arms. In addition to his role with SVI, he has a large number of roles in the not-for-profit sector.

**Ms Brenda M Shanahan**

Ms Shanahan has a research background in finance in Australian and overseas economies and share markets. She is Chair of Challenger Listed Investments and a non-Executive Director of Clinuvel Pharmaceuticals Ltd; DMP Asset Management Ltd and Kimberley Foundation of Australia Ltd. She is a former Chairman of St. Vincent's Health Ltd, former member of the Australian Stock Exchange, and former Executive Director of a stockbroking firm, a fund management company and an actuarial company.

**Dame Janet Spooner D.S.J.**

For over 40 years Dame Janet has supported a number of charities and her dedication was acknowledged in 2004 when she was made a Dame of the Order of St John of Jerusalem (International Order Award). She has been involved with the following organisations in various roles: Royal Women's Hospital – for mothers and babies (made Life Governor), SIDS, Queen Elizabeth Hospital, Lady Mayoress' Committee (made Honorary Life Member), Cabrini Special Events Committee, Bone Marrow Donor Institute, and Women at the Alfred (for prostate cancer). She is also a member of the auxiliary board of the Royal Children's Hospital and a Hummingbird Ambassador for the O'Brien Institute, acting as Honorary Treasurer.

**Mrs Christine Tarascio**

Co-Vice Chair, SVI Foundation

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**

Mr Tarascio has more than 10 years formal hands-on experience in the property industry. Following a brief stint at corporate advisory firm Coopers & Lybrand, he started his career in property at Jones Lang LaSalle, gaining experience in their property management and then sales and leasing divisions. In 1999, he joined the family company, Salta Properties, 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. Mr Tarascio is now Managing Director of Salta Properties.



## Fellowships, prizes and grants

### Bone Cell Biology and Disease

#### Fellowships and Prizes

- T.J. (Jack) Martin is Visiting Research Professor of Medicine, Vanderbilt University, Nashville, USA
- Farzin Takyar was awarded an International Bone and Mineral Society New Investigator Award
- Farzin Takyar was awarded an American Society for Bone and Mineral Research New Investigator Award
- Farzin Takyar was awarded an American Society for Bone and Mineral Research President's Poster Award
- Benoit Le Goff was awarded the New Investigator Prize at the Australian Rheumatology Association 2012 Annual Meeting
- Jack Martin was awarded an honorary doctorate (Hon Causa) from Australian Catholic University

#### Grants

- Natalie Sims, Jack Martin, Nicole Walsh. gp130 signalling in bone formation and resorption. NHMRC Project Grant
- Natalie Sims, Jack Martin, Julian Quinn (PHI). Influence of osteocytes on bone anabolic therapies. NHMRC Project Grant
- Nicole Walsh, Natalie Sims, Evange Romas. The therapeutic value of targeting Wnt signalling for the treatment of osteoarthritis. NHMRC Project Grant
- Jian Guo Zhang (WEHI), Natalie Sims, Yibin Xu (WEHI). Structural and functional analysis of oncostatin M receptor signalling complexes. NHMRC Project Grant
- Natalie Sims, Nicole Walsh. Key factors that influence the development of rheumatoid and osteoarthritis. Rebecca L Cooper Medical Research Foundation Equipment Grant
- Ling Yeong Chia, Natalie Sims. Australian Dental Research Foundation Research Project Grant
- Natalie Sims. Equity Trustees Lynne Quayle Charitable Trust
- Natalie Sims. Angior Foundation Equipment Grant
- Natalie Sims. The Jack Brockhoff Foundation Equipment Grant
- Peter Vee Sin Lee (University of Melbourne), Nicole Walsh, Andrea O'Connor (University of Melbourne). Melbourne Materials Institute. Cell mechanobiology approach to understanding degenerative changes in osteoarthritis. Interdisciplinary Seed Funding
- Pazit Levinger (La Trobe

University), Nicole Walsh, Chris van der Poel (La Trobe University). The pathogenesis of muscle inflammation in knee osteoarthritis and its effect on gait and muscle function. The Barbara Cameron Memorial Grant, Arthritis Australia

### Cell Cycle and Cancer

#### Fellowships and Prizes

- Boris Sarcevic was awarded a Bio21 Institute Presentation award

#### Grants

- Randy Suryadinata. Cumulative cyclin-dependent kinase-mediated phosphorylation of pRb and RBP1 tumor suppressors controls cell cycle progression. Cure Cancer Australia

### Cytoskeleton and Cancer

#### Fellowships and Prizes

- Kevin Mittelstaedt was awarded a SVI Foundation Student Scholarship
- Alice Schofield was awarded a SVI Foundation Student Scholarship
- Cristina Gamell-Fulla was awarded a Fellowship from the Oncology Children's Foundation (NSW)

#### Grants

- Ora Bernard, Michael Parker, Boris Sarcevic, Bruce Kemp. Mass spectrometry facility. Prostate Cancer Foundation of Australia

### Genome Stability

#### Grants

- Andrew Deans. The Lynne Quayle Charitable Trusts, Equity Trustees Equipment Grant
- Andrew Deans. The Margaret Walkom Bequest

### Immunology and Diabetes

#### Fellowships and Prizes

- Helen Thomas received the JDRF Macquarie Group Foundation Diabetes Research Innovation, Early Career Researcher Award
- Helen Thomas became an Associate Professor of the University of Melbourne
- Mugdha Joglekar was awarded a Juvenile Diabetes Research Foundation Postdoctoral Award
- Colleen Elso received travel awards from the Australasian Society for Immunology, CASS Foundation and the International Mammalian Genome Society
- Allison Irvin and Edward Chu were recipients of the SVI Foundation Honours Scholarship Award
- Jonathan Chee received an ASI Travel Award and the ASI minor poster prize for students

#### Grants

- Tom Kay, Helen Thomas. Pathogenesis-based treatment of type 1 diabetes. NHMRC Program Grant
- Tom Kay, Kate Graham, Helen Thomas. Identifying islet factors that stimulate effector capacity in CTLs. JDRF Project Grant
- Tom Kay, Balasubramanian Krishnamurthy. Prevention of autoimmune diabetes by immune tolerance to proinsulin. NHMRC Project Grant
- Helen Thomas, Seth Masters. Glucose-toxicity-induced beta cell apoptosis. NHMRC Project Grant
- Stuart Mannering, Helen Thomas. Analysis of human islet-infiltrating T cells in type 1 diabetes. JDRF SRA Grant
- Tom Brodnicki. How does Trig modulate autoimmunity mediated by toll-like receptors? NHMRC Project Grant
- Tom Brodnicki. Serinc1's role in lymphocyte function and autoimmunity. NHMRC Project Grant

### Invasion and Metastasis Unit

#### Fellowships and Prizes

- EW Thompson was awarded the Matrix Biology Society of Australia and New Zealand Barry Preston Award
- EW Thompson was awarded the 2010 NBCF Pink Circle Research Award
- Edwin Widodo won the poster prize at the TEMTIA-V meeting in Singapore

#### Grants

- EW Thompson, G Goodall, C Saunders, R Anderson, A Yap, I Street, A Dobrovic, A Dowling. Targeting breast cancer recurrence through epithelial mesenchymal plasticity. National Breast Cancer Foundation National Collaborative Research Program Grant
- EW Thompson, A Fabra Fres, G Goodall. Novel MicroRNA Regulators in the breast cancer EMT. National Breast Cancer Foundation / Cancer Australia (Project Grant administered through the University of Melbourne Department of Surgery)
- EW Thompson, I Haviv, M Waltham. A functional genomic screen for tumorigenicity relative to epithelial-mesenchymal transition, breast cancer stem cell biology and therapeutic efficacy. US-DOD IDEA grant
- M Southey, EW Thompson, I Haviv, J Hopper, I Campbell, J Cawson, P Hill, J Stone, G Giles, L Baglietto, C Nickson, G Lindeman, C Clybe, WA Morrison, C Apicella. Molecular determinants of mammographic density. Victorian Breast Cancer Research Consortium

### Molecular Cardiology

#### Fellowships and Prizes

- Suang Suang Koid was awarded NHMRC Postgraduate Scholarship

#### Grants

- Duncan Campbell. Aliskiren: cardioprotection by increased bradykinin levels? NHMRC Project Grant
- Duncan Campbell. SVHM Endowment Fund
- Duncan Campbell. ANZ Trustees Equipment Grant
- Duncan Campbell. The George Carson Bequest

### Molecular Genetics

#### Fellowships and Prizes

- Nicolas Hoch was awarded a Harold Mitchell Foundation Travel Scholarship
- Sabine Jurado was awarded a Melbourne University International Student Fee Reduction Scholarship

#### Grants

- Jörg Heierhorst. Developmental functions of a novel Zinc-finger protein. NHMRC Project Grant
- Jörg Heierhorst. Multi-domain regulation of DNA damage response kinases. NHMRC Project Grant

### National Reference Laboratory

#### Grants

- L Einsiedel, K Wilson. Bronchiectasis and Infection with the Human T-Lymphotropic Virus among Indigenous Australians. NHMRC Project Grant

### Protein Chemistry and Metabolism

#### Grants

- Bruce Kemp, Greg Steinberg. Understanding the importance of lipid metabolism in mediating the anti-diabetic effects of metformin NHMRC Project Grant
- Bruce Kemp, Jon Oakhill. An AMPK myristoyl switch controls AMP mediated metabolic stress signaling. NHMRC Project Grant
- Bruce Kemp, SL Macaulay. Molecular mechanisms underlying obesity and inflammation. CSIRO Preventative Health Flagship Collaboration Grant:

### Stem Cell Regulation

#### Fellowships and Prizes

- Louise Purton was awarded an NHMRC Senior Research Fellowship

## Fellowships, prizes and grants

### Grants

- Louise Purton. Determining the impact of cytotoxic therapies on the bone marrow microenvironment NHMRC Project Grant
- Julie Quach. Christine and T Jack Martin Travel Grant
- Julie Quach. Harold Mitchell Foundation Travel Grant
- Emma Baker. Perpetual Trustees, The Samuel Nissen Charitable Foundation Grant
- Carl Walkley. RNA editing and red blood cell production. NHMRC Project Grant
- Carl Walkley. How does myelodysplastic syndrome affect the bone marrow? NHMRC Project Grant
- Carl Walkley. L.E.W. Carty Charitable Fund Equipment Grant

### Structural Biology

#### Fellowships and Prizes

- Michael Parker was awarded the Ramaciotti Medal for Excellence in Biomedical Research
- Michael Parker was awarded the Lemberg Medal by the Australian Society for Biochemistry and Molecular Biology
- David Ascher received a Continuing Education Award from the CRC for Cancer Therapeutics
- David Ascher received an Agilent Student Research Award
- David Ascher received a Lorne Protein Structure and Function Conference Poster Prize
- Mike Gorman was awarded a Cooperative Research Centre for Cancer Therapeutics Travel Grant
- Julian Tang was awarded a Cooperative Research Centre for Cancer Therapeutics Travel Grant
- Julian Tang was awarded an IUCr Travel Grant
- Julian Tang was awarded a Department Of Medicine, University of Melbourne Travel Grant

### Grants

- Michael Parker and Luke Miles. Bethlehem Griffiths Research Foundation Equipment Grant

## Service to the community

### David Ascher

- Member, Victorian Branch of the Royal Australian Chemical Institute
- Member, Organising Committee, Victorian Branch of the Australian Society for Medical Research, Medical Research Week

### Emma Baker

- Associate Faculty Member, Faculty of 1000, Non-haematopoietic Stem Cell Section

### Ora Bernard

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

### Thomas Brodnicki

- Stage 1 Expert Reviewer, NIH-USA RC4 Grants
- Member, Medical and Scientific Advisory Committee, Juvenile Diabetes Research Foundation International
- Member, Professional Advisory Panel, Juvenile Diabetes Research Foundation Australia
- Member, Equipment Committee, SVI
- Member, Mouse Management Committee, SVI

### Duncan Campbell

- Member, Scientific Advisory Boards of the International Academy of Cardiology and of the World Congress on Heart Disease
- Member, Editorial Board, Integrated Blood Pressure Control
- Member, Editorial Board, Cardiology Research

### Roderick Chappel

- Elected Member Representative on the NATA Council
- Chair, NATA Proficiency Testing Providers Accreditation Advisory Committee
- President of the International Leptospirosis Society
- Member, Taxonomic Subcommittee for Leptospira
- President, Medical Laboratory Quality Network

### Andrew Deans

- Co-ordinator of internal seminars, SVI

### Wayne Dimech

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

- Member, ASM SIG Working Group
- Member, AIMS Working Committee on Point-of-care Testing for Infectious diseases and drugs of abuse
- Member, International Society for Blood Transfusion Working Party on Transfusion Transmitted Infectious Diseases

### Kate Graham

- Honours Program co-convenor
- Program organising committee, Australian Diabetes Society Annual Scientific Meeting, Perth, September 2011

### Jörg Heierhorst

- Member, Cancer Council Victoria Medical & Scientific Committee
- Member, SVI Executive Committee
- Member, SVI Mass Spec Committee
- Member, SVI Student Committee
- Member, SVI Occupational Health and Safety Committee
- Member of Council, Cancer Council Victoria
- Organising Committee, Lorne Genome Conference 2011, Lorne, 2011
- Chair, Lorne Genome Conference 2012, Lorne, 2012

### Sabine Jurado

- Co-chair, Biomed-Link Student Conference, Melbourne, 2011

### Thomas Kay

- Regional Editor, Autoimmunity
- Member, SVI Board of Directors
- Member, SVI Foundation Board
- Member, SVI Commercialisation & Intellectual Property Committee
- Member, SVI Audit & Finance Committee
- Chair, SVI Faculty Executive Committee
- Chair, SVI Faculty Committee
- Chair, St. Vincent's Hospital BioResources Oversight Committee
- Member, St. Vincent's Hospital Executive Committee Research Council
- Member, St. Vincent's Hospital BioResources Centre Users Group
- Member, St. Vincent's Hospital Aikenhead Centre for Medical Discovery Steering Committee
- Member, University of Melbourne/St. Vincent's Hospital Cluster Executive Committee
- Member, St. Vincent's Hospital Medical Executive Committee
- Member, NHMRC Centre of Clinical Research Excellence in

Clinical Science in Diabetes Scientific Committee

- Member, Bio21 Scientific Advisory Committee
- Member, Victoria Breast Cancer Research Consortium (VBCRC) Scientific Committee
- Member, Medical and Scientific Advisory Committee, Juvenile Diabetes Research Foundation

### Bruce Kemp

- Member, Scientific Advisory Board, Mercury Therapeutics, Boston
- Editorial Board, Cellular Signalling
- Editorial Board, Journal of Molecular and Genetic Medicine
- Editorial Advisory Board, The Open Enzyme Inhibition Journal
- Lorne Protein Conference Organising Committee, 2011

### Stuart Mantering

- Member IgV Committee
- Associate Editor, Clinical and Developmental Immunology
- Associate Editor, Journal of Immunoassay and Immunohistochemistry
- Member of ASI 2012 Organizing Committee
- Member of the Immunology of Diabetes Society T cell workshop committee
- Member, Professional Advisory Panel, Juvenile Diabetes Research Foundation Australia
- Member SVH Human Research Ethics Committee-A
- Member, Local Organizing Committee, Australasian Society of Immunology, Meeting Dec 2012

### T.J. Martin

- Visiting Research Professor of Medicine, Vanderbilt University, Nashville, USA. 2009-2011
- Member, Scientific Advisory Board, Botnar Research Centre, Nuffield Orthopaedic Centre, University of Oxford, UK
- Member, Medical Research Advisory Committee, Australian Cancer Research Foundation.
- Member, Scientific Advisory Committee, Victorian Breast Cancer Research Consortium
- Board Member, Victorian Breast Cancer Research Consortium
- Associate Editor and Reviews Editor, Bone
- Associate Editor, Endocrinology
- Editorial Board, Journal of Clinical Investigation
- Editorial Board, Arthritis Research and Treatment
- Editorial Board, Trends in Endocrinology and Metabolism
- Editorial Board, BoneKey

- Scientific Program Committee, European Calcified Tissue Society, Lisbon, 2013.
- Scientific Program Committee, IBMS-Japan Society of Bone and Mineral Research Meeting, Tokyo, 2013
- Scientific Program Committee, Cancer-Induced Bone Disease, Chicago, USA, 2011
- Co-Organiser (with RGG Russell), Molecular Pharmacology of Bone, Oxford, UK, 2012

### Michael Parker

- OzReader, Australian Research Council Grants
- Chair, SVI Equipment Committee
- Member, SVI Commercialisation Committee
- Member, Bio21 Institute Management Committee
- Member, Cooperative Research Centre for Cancer Therapeutics, CTx Operational Group
- Member, Cooperative Research Centre for Cancer Therapeutics, Project Management Group
- President, Organising Committee, Lorne Conference on Protein Structure and Function
- Member, Organising Committee, "Pore-forming proteins", Prato, Italy, April 2012

### Cletus Pinto

- Member, Research Training Committee (SVH campus) (to June 2011)
- Member, St Vincent's Students Society (SVH campus)
- Member, Student Discussion Forum of the European Association of Cancer Research

### Louise Purton

- Member, Leukaemia Foundation Senior Research Fellowships Committee
- Member, Animal Ethics Committee, St. Vincent's Hospital Melbourne
- Faculty Member, Faculty of 1000, Non-haematopoietic Stem Cell Section
- Board of Directors, ISEH Society for Hematology and Stem Cells
- Abstract reviewer, ISEH Society for Hematology and Stem Cells Annual Meeting
- Member, St. Vincent's Hospital Research Training Committee
- Member, Leukaemia Foundation Senior Research Fellowship Committee
- Member, Animal Ethics Committee (AEC), St. Vincent's Hospital Melbourne
- Faculty Member, Faculty of 1000, Non-haematopoietic Stem Cell Section



## Service to the community

- Board of Directors, ISEH Society for Hematology and Stem Cells
- Member, Scientific Committee, New Directions in Leukaemia Research 2012 conference.

### Julie Quach

- Associate Faculty Member, Faculty of 1000, Non-haematopoietic Stem Cell Section

### Boris Sarcevic

- NHMRC grant review panel, Cancer Biology and Oncology
- Policy development at the Victorian Comprehensive Cancer Centre Early Career Professionals Strategic Workshop

### Natalie Sims

- Council Member, Australian and New Zealand Bone and Mineral Society
- Chair, St. Vincent's Cluster Research Technology Committee
- Member, Publications Committee, American Society for Bone and Mineral Research
- Member, NHMRC Fellowship Review Panel
- Editorial Board, Bone
- Editorial Board, BoneKey
- Board Member, International Society for Bone Morphometry
- Board Member, International Bone and Mineral Society
- Associate Editor, Calcified Tissue International
- Steering Committee, IBMS-Japan Society of Bone and Mineral Research Meeting, Tokyo, 2013
- Scientific Programme Committee, European Calcified Tissue Society 29th Symposium Stockholm 2012, Lisbon 2013
- Convenor, Australia and New Zealand Bone and Mineral Society Annual Postgraduate Clinical Training

### Eliza Soo

- Member, BioMed Link Organising Committee (Melbourne University)
- Treasurer, St Vincent's Students Society (SVH campus)

### Gregory Steinberg

- Editor Biochemical Journal Metabolism Section
- Editorial Board, American Journal of Physiology Endocrinology and Metabolism

### Helen Thomas

- Editorial Board, Diabetes
- Member, SVI Foundation Scholarship Awards Committee
- Helen Thomas, Organiser, Immunology Special Interest Group, Australian Diabetes Society Annual Scientific Meeting, Perth, September 2011

- Helen Thomas, Member, Organising committee, Australian Islet Study Group Annual Meeting, Sydney, October 2011

### Erik Thompson

- President, Metastasis Research Society (International)
- Treasurer, The EMT International Association (TEMTIA)
- Board Member, Metastasis Research Society (International)
- Committee Member, Australasian Microarray and Associated Technologies Association (AMATA)
- Member, Research Advisory Committee, National Breast Cancer Foundation, Australia
- Co-Guest Editor, the Journal of Mammary Gland Biology, Special Issue on Epithelial Mesenchymal Transition in Mammary Development and Cancer
- Principal Guest Editor, Cells Tissues Organs, Issue "Epithelial Mesenchymal Transitions: New Advances in Development, Fibrosis and Cancer"
- Co-Guest Editor, Cancer Microenvironment, Special Issue on Microenvironment and Epithelial Mesenchymal Transition
- Associate Editor, Cells Tissues Organs
- Editorial Board Member, Clinical and Experimental Metastasis
- Editorial Board Member, The Breast Journal
- Member, Program Committee, Inaugural Biomarker Discovery Conference, Shoal Bay, NSW, 2010
- Co-convenor TEMTIA 2011, the 5th International EMT Meeting, Singapore, 2011
- Member, Local Organizing Committee, 5th Pacific Rim Breast and Prostate Cancer Conference, Kingscliff, NSW, 2011

- Member, National Breast Cancer Foundation Review Panels for Scholarships, Fellowships and Career Awards
- Member, NSW Cancer Institute Review Panel
- Member, O'Brien Institute Scientific Oversight Committee
- Member, Tissue Resource Management Committee, Peter MacCallum Cancer Centre
- Member, University of Melbourne Working Group for the St. Vincent's International Research Centre
- Member, St. Vincent's Hospital Bioresource Centre Users Committee
- Member, Victorian Functional Genomics Centre Steering

- Committee, Peter MacCallum Cancer Centre (AMATA Representative)

### Carl Walkley

- Member, NHMRC Grant Review Panel
- Deputy Chair, Institutional Biosafety Committee (IBC), St. Vincent's Hospital Melbourne
- South Australian Cancer Collaborative Fellowship Review Committee, External Reviewer
- Leukaemia Foundation, Post-graduate and Post-doctoral fellowships review committee

### Nicole Walsh

- Member (Category B), St. Vincent's Health Animal Ethics Committee
- Acting St Vincent's Institute Representative, UROP Committee
- Co-ordinator, Bi-Monthly Melbourne Musculoskeletal Seminar Series, Melbourne, 2011-present.
- Local Organising Committee, Australian and New Zealand Bone and Mineral Society Annual Meeting, Melbourne, 2013

### Mark Waltham

- Editorial Board, Journal of Cancer Therapy

### Edwin Widodo

- Student Representative, Faculty Advisory Council, Faculty of Medicine (Melbourne University)

## Collaborations

### Bone Cell Biology and Disease

- Dr P Pivonka, The University of Western Australia. Mathematical modelling of bone turnover
- Dr JMW Quinn, Prince Henry's Institute. Cytokine actions on bone formation and resorption
- Prof G Nicholson, The University of Melbourne, Barwon Health. Oncostatin M effect in human osteoblasts
- Prof N Nicola and Dr Jian-guo Zhang, The Walter and Eliza Hall Institute. Oncostatin M mode of action in osteoblasts
- Dr V Krasnoperov, Vascene Therapeutics. Ephrin effects on osteoblasts
- A/Prof E Gardiner, Diamantina Institute. NPY actions on bone
- Drs J Sterling and S Guelcher, Vanderbilt University, Nashville, USA. Effects of bone on cancer cell phenotype
- Prof. EM Gravalles University of Massachusetts Medical School, Worcester, MA, USA. Regulation of bone formation in rheumatoid arthritis
- Dr I Kalazjic, University of Connecticut. Osteocyte models
- Dr MA Karsdal and Dr K Henriksen, Nordic Biosciences. Bone anti-resorptives
- A/Prof JP Levesque and Dr K Winkler, Biotherapy Program, Mater Medical Research Institute, University of Queensland. Effect of stem cell mobilization on bone formation
- Prof E Mackie, The University of Melbourne. PAR2 in bone
- Dr K Matsuo, Keio University, Japan. Eph and Ephrin interactions in bone
- Dr N Morrison, Griffith University. PTH and MCP1 interactions
- Dr J Onyia, Dr N Kulkarni and Dr S McAhren, Eli Lilly and Company. Gene-regulation by Calcitonin
- 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
- Dr T Tiganis, Monash University. T-cell PTP in bone metabolism
- Dr M Kneissel, Novartis Pharmaceuticals. Regulation of sclerostin expression and action
- A/Prof S Gronthos, Department of Haematology, IMVS / Hanson Institute. Ephrin regulation of stem cells
- Dr A Zannettino, Department of Haematology, IMVS / Hanson Institute. Effect of dasatinib on

- bone metabolism
- Prof S Kato, The University of Tokyo, Japan. Zfp467 regulation of osteoblast and adipocyte formation
- Prof C Kovacs, Memorial University of Newfoundland. Effects of pregnancy and lactation on the skeleton
- Dr E Dimitriadis, Prince Henry's Institute. Use of LIF antagonist as a contraceptive agent
- Prof H Kronenberg, Harvard University/Massachusetts General Hospital. G-protein signalling in osteoblasts
- Dr P Levinger, Dr C van der Poel, La Trobe University. Role of muscle inflammation in osteoarthritis
- A/Prof P Vee Sin Lee, Melbourne University. Biomechanical changes contributing to joint destruction in osteoarthritis

### 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 O Bernard, SVI. Regulation of LIMK activity and microtubule dynamics by phosphorylation
- A/Prof J Heierhorst, SVI. Control of ubiquitin-conjugating enzymes

### Cytoskeleton and Cancer

- Dr L Lafanechère, Albert Bonniot Institute. Grenoble France. LIMK inhibitors
- Dr R Anderson, Peter MacCallum Cancer Centre. The role of LIMK1 in cancer metastasis
- Dr D Rice, Lexicon, USA. LIMK inhibitors
- Dr M Watt, Monash University. The role of LIMK2 in controlling obesity
- Dr M Kavallaris, Children's Cancer Institute. NSW, LIMK2 and drug resistance

### Genome Stability

- Dr Alessandro Costa, University of California, Berkeley. Structural analysis of DNA repair proteins
- Dr Stephen C West. Cancer Research UK. Biochemistry of DNA repair proteins
- Assoc Prof David Thomas, Peter MacCallum Cancer Institute. Analysis of sarcoma associated pathways
- Dr Wojciech Niedzwiedz, Oxford University. Role of FANCM in cell cycle
- Dr Simon Boulton, Cancer Research UK. Phosphorylation of Fanconi proteins

### Haematology and Leukaemia

- Dr C Walkley, SVI. Erythropoietin effects on haemopoiesis and bone
- Dr L Purton SVI. The effect of retinoid signalling on T cell development
- Dr S Russell, The Peter MacCallum Cancer Institute. Cell polarity in T cell development
- Dr A Wei, Alfred Hospital. Modelling human leukaemia in mice

### Immunology and Diabetes

- 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 MacCallum Cancer Institute. T-cell mechanisms of beta cell destruction
- Prof K Shortman, The Walter and Eliza Hall Institute. Identification and characterization of mouse diabetes susceptibility genes
- Dr G Belz, The Walter and Eliza Hall Institute. How does bacterial infection affect susceptibility to type 1 diabetes?
- Dr M O'Keefe, The Burnet Institute. Genomic and

functional analyses of a novel gene implicated in type 1 diabetes

- Prof R Strugnell, The University of Melbourne. How does bacterial infection affect susceptibility to type 1 diabetes?
  - Dr O Wijburg, The University of Melbourne. How does bacterial infection affect susceptibility to type 1 diabetes?
  - Dr M Murphy, The University of Melbourne. Genetics of stress response
  - Dr P Verma, Monash Institute of Medical Research. Generating induced pluripotent stem cells from the NOD mouse
  - Dr D Goodman, St. Vincent's Hospital. Immune responses following islet transplantation
  - A/Prof Tony Purcell, Bio21, University of Melbourne. Epitope mapping in human type 1 diabetes
  - Dr N O'Brien-Simpson, Bio21, University of Melbourne. Epitope mapping in human type 1 diabetes
  - Dr J Gunton, Garvan Institute. Insulin secretion and gene expression in human pancreatic islets
  - Dr K Dwyer, St. Vincent's Hospital, Melbourne. Adenoviral transduction of human islets
  - Dr M von Herrath, San Diego, California. Staining of human pancreata in situ with MHC class I and II tetramers
  - A/Prof Tony Purcell, Bio21 Institute, University of Melbourne. Posttranslational modifications in human T1D
  - A/Prof Neil O'Brien-Simpson, University of Melbourne. Peptide antigens in type 1 diabetes
- ### Invasion and Metastasis Unit
- Prof L Ackland, Deakin University, Melbourne. Epithelial Mesenchymal Transition (EMT) in breast cancer
  - Dr N Ahmed, Dept. of Obstetrics and Gynecology, University of Melbourne. EMT in ovarian cancer spheroids
  - A/Prof R Anderson, Peter MacCallum Cancer Centre, Melbourne. MMPs in mouse mammary metastasis models; Targeting breast cancer recurrence through EMP
  - Prof I Campbell, Peter MacCallum Cancer Centre. Molecular and cellular attributes of mammographic density
  - Prof P Choong, University of Melbourne Dept of Surgery, SVH. EMP analysis in CTC and DTC from patients with bone-metastatic breast cancer
  - A/Prof A Dobrovic, Peter MacCallum Cancer Centre. EMP

## Collaborations

- analysis in CTC and DTC from breast cancer, Epigenetic regulation of EMP, Targeting breast cancer recurrence through EMP
- Dr A Dowling, St. Vincent's Hospital, Melbourne. Targeting breast cancer recurrence through EMP
  - Prof A Fabra Fres. IDIBELL, Barcelona, Spain. Novel microRNA regulators in the breast cancer EMP
  - Prof G Goodall, Centre for Cancer Biology, Adelaide. Novel microRNA regulators in the breast cancer EMP; Targeting breast cancer recurrence through EMP
  - Dr I Haviv, Baker IDI Heart and Diabetes Institute, Melbourne. Tumour stromal interactions; Functional genomics for EMP; Novel microRNA regulators in the breast cancer EMP; Targeting breast cancer recurrence through EMP
  - Prof M Henderson, Department of Surgery, University of Melbourne. Novel microRNA regulators in the breast cancer EMP; Targeting breast cancer recurrence through EMP
  - A/Prof P Hill, St Vincent's Hospital, Melbourne. EMT markers in archival breast cancer, Molecular and cellular attributes of mammographic density
  - Prof J Hopper, Centre for MEGA Epidemiology, University of Melbourne. Molecular and cellular attributes of mammographic density
  - Prof WA Morrison, O'Brien Institute, Melbourne. Molecular and cellular attributes of mammographic density
  - Dr D Newgreen, Murdoch Children's Research Institute, Melbourne. EMT in breast cancer
  - Dr J Price, Dept. of Biochemistry, Monash University, Melbourne. HSPs and EMT; Molecular determinants of bone metastasis
  - Prof C Saunders, School of Surgery and Pathology, the University of WA, Perth. Targeting breast cancer recurrence through EMP
  - Dr L Soon, Australian Key Centre for Microscopy and Microanalysis, AMMRF, University of Sydney. Breast cancer cell migration in 3D; Molecular and cellular attributes of mammographic density; Targeting breast cancer recurrence through EMP
  - Prof M Southey, Dept of Pathology, University of Melbourne. Mammographic density
  - Prof K Stanley, AusDiagnostics, Sydney. Multiplex tandem PCR for paraffin-embedded archival material and EMT; Targeting breast cancer recurrence through EMP
  - Dr I Street, CRC for Cancer Therapeutics and WEHI, Melbourne. Targeting breast cancer recurrence through EMP
  - Dr M Waltham, SVI. MMP inhibition studies; EMP studies
  - Prof Z Werb, Dept. of Anatomy, University of California, San Francisco, USA. MMP-13 in breast cancer progression
  - Dr E Williams, Monash Institute for Medical Research, Melbourne. EMT; bladder and prostate cancer bone metastasis
  - Prof A Yap, IMB, the University of Queensland, Brisbane. Targeting breast cancer recurrence through EMP
- ### Molecular Cardiology
- A/Prof D Kelly, The University of Melbourne, Department of Medicine, St. Vincent's Hospital. The effect of renin inhibition in rats
  - Mr M Yui, 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 new strategies for the treatment of acute lung injury
  - Dr MJ Black, Department of Anatomy, Monash University. Investigation of the pathogenesis of diastolic dysfunction
  - Prof H Krum and A/Prof C Reid, Department of Epidemiology and Preventive Medicine, Monash University. Strategies for the detection of heart failure in the community
- ### Molecular Genetics
- Prof Ming-Daw Tsai, Academia Sinica. Rad53 regulation
  - Dr Achille Pelliccioli, University of Milan. Rad53 regulation
  - Dr M Basrai, NIH. Robotic genetic analyses of the yeast ESL genes
  - A/Prof T Preiss and Dr T Beilharz, Victor Chang Institute and Monash Uni. Transcriptome analyses of ESL genes
  - Dr Ian Smyth and A/Prof Tim Cole, Monash University. Organ development defects in ASCIZ KO mice
  - Prof David Tarlinton, WEHI. Role of ASCIZ in the immune system
- ### NRL
- Pacific Island Countries (PICs) Taskforce consisting of Centers for Disease Control (CDC) Atlanta, World Health Organization (WHO) Manila, Secretariat of the Pacific Community (SPC) Noumea, United Nations International Children's Emergency Fund (UNICEF) Suva, United Nations Fund for Population Affairs (UNFPA) Suva, Pacific Counselling and Social Services (PCSS) Lautoka and Pacific Paramedical Training Center (PPTC) Wellington. Development and Validation of an HIV Confirmatory Testing Strategy for use in Pacific Island Countries
  - Dr L Einsiedel, Faculty of Medicine, Northern Territory Rural Clinical School/Flinders University. HTLV-1 among indigenous Australians
  - Dr R Griffiths, Department of Preventive and Social Medicine University of Otago (Auckland-based) New Zealand. HIV Prevalence, New Zealand
  - Dr J Rowe, Centre for Applied Social Research, School of Global Studies, Social Science and Planning RMIT University Melbourne. HIV Prevalence in the unregulated sex industry
  - Associate Professor M Hellard and Dr M Stoové, The Centre for Population Health, The Burnet Institute. Identifying unrecognised HIV infection among Australian gay men
  - Associate Professor M Hellard, Burnet Institute, Australian Collaboration for Chlamydia Enhanced Sentinel Surveillance (ACCESS) Laboratory Network
  - Dr D Conway, The Kirby Institute, Faculty of Medicine, University of New South Wales. HIV-1 Point of Care Testing
  - Dr J Debattista, Metro North & Sunshine Coast Health Service Districts, Sexual Health & HIV Service, Brisbane. HIV-1 Point of Care Testing
  - Dr T Read, Melbourne Sexual Health Centre. HIV-1 Point of Care Testing
  - Dr L Causer and Dr R Guy, Public Health Interventions Research Group, The Kirby Institute, Faculty of Medicine, University of New South Wales. Rapid Syphilis Point of Care Testing
  - Prof S Kent, Dept of Microbiology and Immunology, University of Melbourne. Macaque studies on HIV vaccines.
  - Winthrop Prof M French, School of Pathology and Laboratory Medicine, University of Western Australia. HIV Controller study
  - Prof A Kelleher, The Kirby Institute, St Vincent's Centre for Applied Medical Research (AMR), UNSW. HIV controller study
  - Dr R Centre, Dept of Microbiology and Immunology, University of Melbourne. HIV Controller Study.
  - Dr M Kato, Dr V Nguyen, World Health Organization Viet Nam. Implementation of a rapid HIV confirmatory testing algorithm in Primary Health Care Centres
  - Associate Professor M Shephard, Flinders University International Centre for Point-of-Care Testing, Flinders University. Australian Institute of Medical scientists working committee on point-of-care testing for infectious diseases and drugs of abuse
  - Dr R Hartskeerl and Ms M Goris, Royal Tropical Institute, Amsterdam, The Netherlands. Proficiency Testing for the Leptospirosis Microscopic Agglutination Test.
  - Mr M Palmer, County Hospital, Hereford, UK. Proficiency Testing for the Leptospirosis Microscopic Agglutination Test.
  - Prof. G Monti, Universidad Austral de Chile, Valdivia, Chile. Data Analysis of Leptospirosis Proficiency Testing Results.
- ### Pharmacogenomics
- Prof EW Thompson, SVI. MMP inhibition studies in breast cancer systems and gene array analysis of epithelial-mesenchymal transition
  - A/Prof 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
- ### Protein Chemistry and Metabolism
- A/Prof G. Baldwin Department of Surgery University of Melbourne. Gastrointestinal peptides
  - Dr L Macaulay, CSIRO Molecular Health Technologies. Lipid metabolism, obesity
  - Dr L Witters, Darnmouth Medical College. AMPK structure and function
  - Prof D Power, Austin Research Institute. AMPK and kidney function
  - Dr S. Fraser Austin Research Institute. AMPK and kidney function
  - Dr P. Mount, Dept. of Nephrology, Austin Hospital, Heidelberg AMPK and ischaemia.
  - Dr S Jørgensen Diabetes Research Unit, Novo Nordisk A/S, 2760 Maaloev, Denmark Role of AMPK in exercise
  - Dr G McConell, Department of Physiology, University of Melbourne. AMPK and exercise
  - Prof DG Hardie, Division of Molecular Physiology, College of

## Collaborations

Life Sciences, University of Dundee, Dundee, Scotland, Control of ACC1 & 2

– Prof F Lang Department of Physiology, University of Tübingen, Gmelinstrasse 5, Tübingen, Germany Role of AMPK in ion channel control

– Dr A Means, Duke University Medical Centre. CaMKK  $\beta$  structure and function

– Dr G Thomas Department of Cancer and Cell Biology, Metabolic Diseases Institute, University of Cincinnati, Cincinnati, OH, USA. Role of AMPK in metabolic control

– Prof E Richter Department of Exercise and Sport Sciences, University of Copenhagen, Copenhagen, 2100 Denmark Role of AMPK in exercise

– 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

– Prof A. Shulkes, Department of Surgery University of Melbourne. Gastrointestinal peptides

– Dr A Wilson, St. Vincent's Hospital. Insulin resistance, adipocyte biology and cardiovascular disease

### Stem Cell Regulation

– Prof S Orkin, Dana-Farber Cancer Institute. Osteosarcoma, erythroid differentiation

– Dr K Janeway, Dana-Farber Cancer Institute. Osteosarcoma

– Prof TJ Martin, SVI. Osteosarcoma

– Prof J Mattick, Garvan Institute, RNA Editing

– Dr J Hartner, TaconicArtemis GmbH, Germany, RNA Editing

– Dr M Higuichi, Max-Planck Institute, Heidelberg, Germany, RNA Editing

– Dr V Sankaran, Dana-Farber Cancer Institute. Erythroid differentiation

– Dr J Danks, RMIT Bundoora. Osteosarcoma

– Dr M Dray, Middlemore Hospital Auckland. Osteosarcoma

– Prof L Gudas, Weill Cornell University, New York, USA. Leukaemia studies

– Prof M Parker, SVI. Leukaemia studies

– Prof P Chambon, IGBMC, France. Retinoid studies

– Dr R Chandraratna, IO Therapeutics, USA. Retinoid studies

– Prof A Zannettino, Institute of Medical and Veterinary Science, Adelaide. Myeloma niche

studies

– Dr L Bendall, Westmead Millenium Institute for Medical Research, Sydney, Leukaemia niche studies

– Dr D Izon, SVI. Retinoid and T cell studies

– Prof S Karlsson, Lund Stem Cell Centre, Lund, Sweden. Leukaemia studies

### Structural Biology

– Dr D Rhodes, JDJ Bioservices, Victoria. HIV

– Dr S Tucker, Biota, Victoria. Viral respiratory diseases

– Dr O Bernard, SVI. LIM kinase

– Prof P Board, Australian National University. Glutathione transferases

– Prof D Bowtell, Peter MacCallum Cancer Institute. Proteins involved in ubiquitination

– Prof A Frauman, Austin Health, The University of Melbourne. Prostate cancer proteins

– Prof B Kemp, SVI. Protein kinase regulation

– Prof A Lopez, Centre for Cancer Biology, SA Pathology. Cytokine receptors

– Prof J Martin, SVI. Phosphodiesterases

– Prof E Simpson, Prince Henry's Institute of Medical Research. Steroid receptors

– Dr C Clyne, Prince Henry's Institute of Medical Research. Steroid receptors

– Dr D Stapleton, University of Melbourne. Protein kinase regulation

– Prof M Vadas, Centenary Institute for Cancer Research. Protein kinases

– Prof M Waters, University of Queensland. Growth hormone receptor

– Dr S Y Chai, Monash University. IRAP

– A/Prof S Petrou, University of Melbourne. Ion channels and viral inhibitors

– Prof S Bottomley, Monash University. Serpins

– Prof J Gamble, Centenary Institute for Cancer Research. Protein kinases

– A/Prof R Pace, Australian National University. Photosystem II

– A/Prof P Thompson, Monash University. Phosphodiesterase inhibitors

– Dr R Tweten, University of Oklahoma, USA. Pore-forming toxins and receptors

– Prof P Dyson, Ecole Polytechnique Federale de Lausanne, Switzerland. Cisplatin drugs

– Prof M Lo Bello, University of Rome "Tor Vergata". Glutathione transferases

– Dr L Garcia-Fuentes, University of Almeria. Glutathione transferases

– Dr G Stenberg, Uppsala University. Glutathione transferases

– Dr M Scanlon, Monash University. HIV integrase

– Dr S Pitson, Centre for Cancer Biology, SA Pathology. Sphingosine Kinase

– A/Prof M Perugini, Bio21 Institute, Melbourne University. Bacterial virulence factors

– Prof P Batterham, Bio21 Institute, Melbourne University. Insecticide targets

– Dr T Bryan, Children's Medical Research Institute, Sydney. Telomerase

– Dr S Cohen, Children's Medical Research Institute, Sydney. Telomerase

– Prof P Robinson, Children's Medical Research Institute, Sydney. Brain proteins

– Dr Adam Ratner, Columbia University, New York. Toxins

– Dr G Nie, Prince Henry's Institute of Medical Research. PC6

– Dr C Harrison, Prince Henry's Institute of Medical Research. PC6

– Prof E Reynolds, Melbourne University. Gum disease

– Dr E Dimitriadis, Prince Henry's Institute of Medical Research. LIF

– Prof G Marshall, Centre for Children's Cancer and Blood Disorders, Sydney Children's Hospital. EBBP

– Prof K Kirk, Australian National University; Malaria

– Prof M McConville, Bio21 Institute, Melbourne University. Tropical diseases

– A/Prof P Ekert, WEHI. Cytokine signalling

– A/Prof John Silke, WEHI. TNF signalling.

– Prof S McColl, University of Adelaide. Cytokine signalling

– Dr S Ralph, Bio21 Institute, Melbourne University. Malaria

– Dr T Mulhern, Bio21 Institute, Melbourne University. SAXS

– Dr P Gooley, Bio21 Institute, Melbourne University. Protein kinase regulation

– Prof S Krilis, St. Georges Hospital, UNSW, Sydney, NSW. Antiphospholipid syndrome

– Dr H Harris, Adelaide University, South Australia. EXAFS

– Dr K Dwyer, St. Vincent's Hospital. Adenosine receptors

– Dr C Walkley, SVI. ADARs

– Dr L Purton, SVI. Hox

– Prof T Hughes, Royal Adelaide Hospital. BCR-ABL

– Dr A Hurt, WHO Melbourne. Influenza

– Dr K Peter, Baker IDI. Elastin

– Dr A Wei, Alfred Hospital. Kinases

– Dr B Sarcevic, SVI. Ubiquitin

– Dr A Nash; CSL. Protein targets

– A/Prof M Gorell, Centenary Institute for Cancer Research. FAP

## Presentations

### David Ascher

- Melbourne Protein Group, Melbourne. Invited speaker

### Nilukshi Arachchi

- 28th NRL Workshop on Infectious Diseases, Canberra. Speaker

### Liza Cabuang

- 28th NRL Workshop on Infectious Diseases, Canberra. Speaker

### Roderick Chappel

- Workshop on Leptospirosis Diagnosis, Bangkok, Thailand. Invited speaker
- Seventh Scientific Meeting of the International Leptospirosis Society, Mérida, México. Speaker
- 28th NRL Workshop on Infectious Diseases, Canberra. Speaker

### Stirling Dick

- ASM Conference, Hobart. Speaker

### Wayne Dimech

- 28th NRL Workshop on Infectious Diseases, Canberra. Speaker

### Jörg Heierhorst

- Keystone Symposium Lung Development and Repair, Santa Fe, USA. Speaker
- COMBIO 2011, Cairns. Invited speaker
- 5th Australian B Cell Dialogue, Melbourne. Speaker
- 13th Australian Cell Cycle Workshop, Noosa. Speaker
- Children's Medical Research Institute, Sydney. Seminar speaker
- Australian Wine Research Institute, Adelaide. Seminar speaker
- Department of Biochemistry and Molecular Biology, Monash University, Melbourne. Seminar Speaker
- University of Pittsburgh Cancer Institute, Pittsburgh, USA. Seminar speaker
- Department of Biochemistry, La Trobe University, Melbourne. Seminar speaker
- Department of Biomolecular Sciences and Biotechnology, University of Milan, Italy. Seminar speaker
- Institute of Biological Chemistry, Academia Sinica, Taipei, Taiwan. Seminar speaker

### Nicolas Hoch

- 13th Australian Cell Cycle Workshop, Noosa. Speaker

### Gaurang Jhala

- Biomedlink 2011 Student Conference, St Vincent's Hospital. Speaker

### Sabine Jurado

- CTx Student Symposium, Melbourne. Speaker

- St. Vincent's Hospital Research Week, Melbourne. Speaker

### Thomas Kay

- Peter MacCallum Cancer Centre Seminar, Melbourne. Invited speaker
- 14th Australasian Autoimmunity Workshop, Brisbane. Invited speaker
- Federation of Clinical Immunology Societies 2011, Washington DC. Speaker
- 2011 International Conference for Bioecomy, Tianjin, China. Invited speaker
- Immunology Group of Victoria (IgV) Human Immunology Master Class, Melbourne. Invited speaker
- Autoimmune Insulin Dependent Diabetes for students of the Foundations of Biomedical Science at The University of Melbourne, Melbourne. Invited speaker

- Asian Pacific Hepato Pancreato Biliary Association Congress, Melbourne. Invited speaker

- Bio21 Cluster Hospital Research Directors Forum, Translational Research, The Melbourne Summit, Melbourne. Invited speaker

- University of Melbourne Faculty of Medicine, Dentistry and Health Sciences – Diabetes, Obesity & Endo Research Domain Symposium, Melbourne. Invited speaker

- Ritchie Centre 2011 Colloquium, Melbourne. Invited speaker

- SVI Foundation \$10,000 Discovery Fund Luncheon

- SVI Foundation Alcaston Gallery Event

- SVI Dinner and Tour for \$10,000 Discovery Fund Members and guests

- SVI Dinner and Tour (type 1 diabetes focus)

- SVI Annual Forum: Cancer Prevention

- SVI Luncheon with Guest Speaker The Hon Tony Abbott, Leader of the Opposition

- SVI Dinner and Tour (Cancer focus)

- Guest Speaker, Scotch College Father/Son Breakfast

- SVI Dinner and Tour with Guest Speaker, The Hon Mark Dreyfus, Parliamentary Secretary for Climate Change and Energy Efficiency

- SVI Support Group Black Tie Dinner

- SVI Golf Day

- SVI \$10,000 Discovery Fund Myer Boardroom Lunch

### Bruce Kemp

- FASEB Protein Kinases and Protein Phosphorylation, Snowmass Village, Colorado, USA. Invited speaker
- Molecular Cardiology Research Institute Tufts Medical Centre, Boston, MA, USA. Seminar speaker
- Cellular Signalling Technologies 1 August 2011, Danvers, MA, USA. Seminar speaker
- The First Frontiers in Obesity and Diabetes Research, Royal Society of Victoria, Melbourne. Invited speaker
- Department of Physiology University of Melbourne, 5 October 2011. Seminar speaker
- ANZAAS Victorian Division, GTAC Parkville 19 October 2011, Invited speaker

### Bala Krishnamurthy

- Australian Diabetes Society Annual Scientific Meeting, Perth. Speaker

### Xianning Lai

- 13th Australian Cell Cycle Workshop, Noosa. Speaker

### Sally Land

- International Workshop on HIV and Hepatitis Virus Drug Resistance and Curative Strategies, Los Cabos, Mexico. Speaker

- 28th NRL Workshop on Infectious Diseases, Canberra. Speaker

### Benoit Le Goff

- Australian Rheumatology Association Annual Meeting. Brisbane, Australia. Speaker

### Stuart Mannering

- Australian Diabetes Society, Annual Scientific Meeting, 2011. Speaker

### T.J. Martin

- Advances in Mineral Metabolism, Snowmass, Colorado, USA. Invited speaker
- Sarcoma Study Group, Melbourne. Invited speaker
- Indiana University, Indianapolis, USA. Invited speaker
- 14th Course on Osteoporosis and Metabolic Bone Disease, Gold Coast. Invited speaker
- Korean Society for Bone Metabolism, Seoul, South Korea. Invited speaker

### Zia Mollah

- St Vincent's Hospital Research Week, Melbourne. Speaker

### Jonathon Oakhill

- Lorne Conference on Protein Structure and Function, Lorne, Vic. Speaker
- CSIRO Parkville, Melbourne, Vic. Seminar speaker
- ComBio, Cairns, Qld. Invited speaker

- University of Melbourne DOER symposium, Melbourne, Vic. Invited speaker

### Hayley O'Neill

- Canadian Obesity Network Seminar, McMaster University, Hamilton, Canada. Seminar speaker
- University of Copenhagen, The Novo Nordisk Foundation, Center for Basic Metabolic Research, Copenhagen, Denmark. Invited speaker

### Michael Parker

- BIT's 3rd Annual International Congress of Antibody-2011, Beijing, China. Invited speaker
- 22nd Congress of the International Union of Crystallography, Madrid, Spain. Invited speaker
- Australian Society for Biochemistry and Molecular Biology Annual Conference (ComBio2011), Cairns, Queensland. Invited plenary speaker
- Fifth Barossa Meeting Science amongst the Vines: "Cell signaling and molecular medicine", Barossa Valley, South Australia. Invited speaker
- John Curtin School of Medical Research, Canberra, Australian National University. Invited speaker

### Louise Purton

- International Symposium on Stem Cells and Regenerative Medicine, Mexico City, Mexico. Invited speaker

### Sue Rogers

- Deakin University School of Medicine, Geelong, Vic. Seminar speaker
- ComBio, Cairns, Qld. Invited speaker
- RMIT University School of Medical Sciences, Bundoora, Vic. Guest lecturer

### Boris Sarcevic

- University of Kansas Medical Center
- Dept. of Physiology, University of California San Francisco
- 14th Annual Australian Cell Cycle Meeting. Noosa, QLD
- Lorne Protein Conference, Lorne

### Natalie Sims

- University of Western Australia Department of Pathology Seminar Series, Perth. Seminar speaker
- Australia and New Zealand Bone and Mineral Society Satellite Symposium / Advanced Quantitative Bone Imaging Workshop, Gold Coast. Invited speaker

## Presentations

- The University of Western Australia Institute of Advanced Studies Cartilage and Bone Symposium, Perth, Invited speaker
- Australia and New Zealand Bone and Mineral Society Annual Postgraduate Clinical Training Course, Sydney. Invited speaker
- Australia and New Zealand Bone and Mineral Society Annual Postgraduate Clinical Training Course, Melbourne. Invited speaker & Convenor
- International Osteoporosis Foundation / Australia and New Zealand Bone and Mineral Society 2nd Asia-Pacific Osteoporosis and Bone Meeting, Gold Coast. Invited speaker
- International Bone and Mineral Society Sun Valley Workshop, Sun Valley USA, Invited speaker
- American Society for Bone and Mineral Research Annual Scientific Meeting, San Diego USA. Speaker

### **Sofie Singbrant Soderberg**

- St. Vincent's Institute and Department of Medicine, The University of Melbourne seminar series. Invited speaker

### **Gregory Steinberg**

- Banting and Best Diabetes Centre Scientific Day. Invited speaker
- Muscle Health and Awareness Day. York University. Invited speaker
- Rigel Pharmaceuticals, South San Francisco. Invited speaker
- Thrombosis and Atherosclerosis Research Institute, Hamilton. Seminar speaker
- Boehringer-Ingelheim, Toronto. Seminar speaker

### **Joshua Szanyi**

- UROP presentation day, Melbourne. Speaker

### **Farzin Takyar**

- European Calcified Tissue Society / International Bone and Mineral Society Annual Meeting, Athens Greece. Speaker
- American Society for Bone and Mineral Research, San Diego USA. Speaker

### **Shanna Tam**

- Research Training Forum Series, Department of Medicine, St Vincent's Hospital. Seminar speaker
- Cell Biology Seminar, Imperial College London, UK. Invited speaker

### **Helen Thomas**

- University of Melbourne Department of Microbiology and Immunology. Seminar speaker
- John Curtin School of Medical Research. Seminar speaker
- Australasian Autoimmunity

Workshop, Brisbane.  
Invited speaker

- The Annual Meeting of the EASD Islet Study Group, Natal, Brazil. Speaker

### **Erik Thompson**

- International Bone & Mineral Society, Cancer and Bone Society meeting, Chicago, IL, USA. Invited speaker
- Joint TuMIC – Metastasis Research Society – Champalimaud Foundation Conference 'New Concepts in Cancer Metastasis', Champalimaud Cancer Centre, Lisbon, Portugal. Invited speaker
- 102nd Annual AACR meeting, Orlando, FLA, USA. Invited panelist
- Keystone Symposium on Epithelial Plasticity and Epithelial to Mesenchymal Transition, Vancouver, B.C., Canada. Invited speaker
- 7th International Conference on Proteoglycans held in conjunction with the Matrix Biology Society of ANZ Annual Meeting, Sydney, NSW; 16-20 Oct. Barry Prestor Award Lecturer

- ANZ BCTG 33rd Annual Participants' Scientific Meeting, Royal Pines Resort, Gold Coast, QLD. Invited speaker
- Breast Interest Group of the Royal Australian & New Zealand College of Radiologists – 8th General Breast Imaging Meeting. Invited speaker
- Idibell, Barcelona, Spain
- St. Vincent's Hospital (Melbourne), Breast cancer multidisciplinary meeting
- St. Vincent's Institute Cross Campus Research Seminar, Melbourne
- Deakin University, School of Medicine

### **Joe Vincini**

- SoGAT Clinical Diagnostics III, London, United Kingdom. Speaker
- 28th NRL Workshop on Infectious Diseases, Canberra. Speaker

### **Jibran Wali**

- Australian Diabetes Society Annual Scientific Meeting, Perth. Speaker
- Australian Islet Study Group, Sydney. Speaker

### **Carl Walkley**

- European Calcified Tissue Society/International Bone and Mineral Society Joint Conference, Models of Cancer Session, Athens, Greece. Invited Speaker
- The Second International Retinoblastoma Tumor Suppressor Symposium, Toronto,

Canada (Declined due to family commitment). Invited Speaker

- Annual Sarcoma Conference, Australian Sarcoma Study Group. Invited Speaker

### **Nicole Walsh**

- International Osteoporosis Foundation / Australia and New Zealand Bone and Mineral Society 2nd Asia-Pacific Osteoporosis and Bone Meeting, Gold Coast. Speaker
- World Congress in Osteoarthritis, OARSI Annual Meeting. San Diego, USA. Speaker

### **Kim Wilson**

- RCPA Pathology Update, Melbourne. Invited speaker

## Publications

- Albiston, A. L., Diwakarla, S., Fernando, R. N., Mountford, S. J., Yeatman, H. R., Morgan, B., et al. Identification and development of specific inhibitors for insulin-regulated aminopeptidase as a new class of cognitive enhancers. *British Journal of Pharmacology*, 164(1), 37-47.
- Alesutan, I., Foller, M., Sopjani, M., Dermaku-Sopjani, M., Zelenak, C., Fröhlich, H., et al. Inhibition of the heterotetrameric K(+) channel KCNQ1/KCNE1 by the AMP-activated protein kinase. *Molecular Membrane Biology*, 28(2), 79-89.
- Alesutan, I., Munoz, C., Sopjani, M., Dermaku-Sopjani, M., Michael, D., Fraser, S., et al. Inhibition of Kir2.1 (KCNJ2) by the AMP-activated protein kinase. *Biochemical and Biophysical Research Communications*, 408(4), 505-510.
- Alesutan, I., Sopjani, M., Munoz, C., Fraser, S., Kemp, B. E., Foller, M., et al. Inhibition of Connexin 26 by the AMP-Activated Protein Kinase. *Journal of Membrane Biology*, 240(3), 151-158.
- Arthur, A., Zannettino, A., Panagopoulos, R., Koblar, S. A., Sims, N. A., Stylianou, C., et al. EphB/ephrin-B interactions mediate human MSC attachment, migration and osteochondral differentiation. *Bone*, 48(3), 533-542.
- Ascher, D. B., Cromer, B. A., Morton, C. J., Volitakis, I., Cherny, R. A., Albiston, A. L., et al. Regulation of Insulin-Regulated Membrane Aminopeptidase Activity by Its C-Terminal Domain. *Biochemistry*, 50(13), 2611-2622.
- Askmyr, M., Quach, J., & Purton, L. E. Effects of the bone marrow microenvironment on hematopoietic malignancy. *Bone*, 48(1), 115-120.
- Bertin-Maghit, S., Pang, D. M., O'Sullivan, B., Best, S., Duggan, E., Paul, S., et al. Interleukin-1 beta Produced in Response to Islet Autoantigen Presentation Differentiates T-Helper 17 Cells at the Expense of Regulatory T-Cells Implications for the Timing of Tolerizing Immunotherapy. *Diabetes*, 60(1), 248-257.
- Bhattacharyya, S., Zhao, Y. X., Kay, T. W. H., & Muglia, L. J. Glucocorticoids target suppressor of cytokine signaling 1 (SOCS1) and type 1 interferons to regulate Toll-like receptor-induced STAT1 activation. *Proceedings of the National Academy of Sciences of the United States of America*, 108(23), 9554-9559.
- Campbell, D. J., Somaratne, J. B., Jenkins, A. J., Prior, D. L., Yui, M., Kenny, J. F., et al. Differences in Myocardial Structure and Coronary Microvasculature Between Men and Women With Coronary Artery Disease. *Hypertension*, 57(2), 186-U109.
- Campbell, D. J., Somaratne, J. B., Jenkins, A. J., Prior, D. L., Yui, M., Kenny, J. F., et al. Impact of type 2 diabetes and the metabolic syndrome on myocardial structure and microvasculature of men with coronary artery disease. *Cardiovascular Diabetology*, 10.
- Campbell, D. J., Zhang, Y., Kelly, D. J., Gilbert, R. E., McCarthy, D. J., Shi, W., et al. Aliskiren increases bradykinin and tissue kallikrein mRNA levels in the heart. *Clinical and Experimental Pharmacology and Physiology*, 38(9), 623-631.
- Carrington, E. M., Kos, C., Zhan, Y. F., Krishnamurthy, B., & Allison, J. Reducing or increasing beta-cell apoptosis without inflammation does not affect diabetes initiation in neonatal NOD mice. *European Journal of Immunology*, 41(8), 2238-2247.
- Chee, J., Angstetra, E., Mariana, L., Graham, K. L., Carrington, E. M., Bluethmann, H., et al. TNF Receptor 1 Deficiency Increases Regulatory T Cell Function in Nonobese Diabetic Mice. *Journal of Immunology*, 187(4), 1702-1712.
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- Chircop, M., Sarcevic, B., Larsen, M. R., Malladi, C. S., Chau, N., Zavortink, M., et al. Phosphorylation of dynamin II at serine-764 is associated with cytokinesis. *Biochimica Et Biophysica Acta-Molecular Cell Research*, 1813(10), 1689-1699.
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## SVI Seminar Program

### **Prof Mark Forwood**

Chair of Anatomy, Griffith University Gold Coast

"MCP-1 gene expression dominates chemokine activation of skeletal repair and remodelling in the rat"

### **A/Prof Sara Kozma**

University of Cincinnati Medical Center, Cincinnati, OH, USA

"S6K1 regulates pancreatic  $\beta$ -cell size and insulin homeostasis in a cell-autonomous manner, independent of intrauterine growth restriction"

### **Dr Christine Hawkins**

Department of Biochemistry, La Trobe University

"A healthy life after cancer – killing cancer cells without mutating normal cells"

### **A/Prof Ann Turnley**

Centre for Neuroscience, University of Melbourne

"Regulation of neural precursor cell proliferation, migration and integration in the adult nervous system"

### **Dr Honor Hugo**

Invasion and Metastasis Unit, SVI

"ZEB1 suppression underpins Mesenchymal to Epithelial Transition: Implications for metastatic tumour growth driven by MYB"

### **Dr Marnie Blewitt**

Molecular Medicine Division, WEHI

"The polycomb repressive complexes play opposing rather than synergistic roles in hematopoietic stem and progenitor cells"

### **Prof Claude Bernard**

Deputy Director, Immunology & Stem Cell Laboratories, Monash University

"The promise of stem cells as a neurogenerative approach to the treatment of multiple sclerosis"

### **Prof Mark Cooper**

Head of Research, Baker IDI

"Sweet dreams: the pathobiology of metabolic memory"

### **Dr Daniela Stock**

Victor Chang Cardiac Research Institute

"Structure and function of biological rotary motors"

### **Dr Sofie Singbrant**

Stem Cell Regulation Unit, SVI

"Erythropoietin (Epo) does more than regulate the formation of red blood cells"

### **A/Prof Peter Meikle**

Head, Metabolomics Laboratory, Baker IDI Heart & Diabetes Institute

"Lipid Profiling for the

investigation of Metabolic Syndrome Related Disease"

### **Dr Benoit Le Goff**

Bone Cell Biology and Disease Unit, SVI

"Oncostatin M: a key player in inflammatory arthritis"

### **Prof Jonathan Crowston**

Managing Director, Centre for Eye Research Australia

"Mitoprotection: protecting retinal ganglion cells when mitochondria misbehave"

### **Dr Odilia Wihburg**

Dept of Microbiology and Immunology, University of Melbourne

"The role of influenza A virus in Streptococcus pneumoniae transmission and disease"

### **Dr Stephen Tonna**

Bone Cell Biology and Disease Unit, SVI

"The genetics of inherited kidney diseases from focal & segmental glomerulosclerosis to diabetic nephropathy"

### **Prof David Tarlinton**

Immunology Division, WEHI

"The molecular basis of sustaining B cell memory"

### **Dr Darren Saunders**

Garvan Institute of Medical Research

"Illuminating molecular pathways in cancer: In situ detection of ubiquitin ligase substrates"

### **Dr David Izon**

Haematology and Leukaemia Unit, SVI

"Lymphoid development from myeloid progenitors: challenging the dogma"

### **Dr Tony Mutsaers**

Stem Cell Regulation Unit, SVI

"Models of Osteosarcoma: from Mice and Dogs to Human"

### **Dr Jon Oakhill**

Protein Chemistry and Metabolism Unit, SVI

"ARMed and Charged: New Insights on Energy Sensing by AMPK"

### **Prof Neil Watkins**

Centre for Cancer Research, Monash Institute of Medical Research

"Hedgehog signalling: From Flies to clinical trials"

### **Dr Stephen Ting**

Peter MacCallum Cancer Centre

"Haematopoietic stem cell self-renewal via asymmetric cell division"

### **Dr Leanne Cotton**

Australian Phenomics Network, Monash University

"Australian Phenomics Network

Overview"

### **Dr Andrew Deans**

Genome Stability Unit, SVI

"Familial cancer syndromes linked to genome instability: a biochemical approach"

### **Dr John Pimanda**

Lowy Cancer Research Centre & The Prince of Wales Clinical School, University of NSW

"Transcriptional control of normal and abnormal blood stem cell development"

### **Dr Rachelle Johnson**

Bone Cell Biology and Disease Unit, SVI

"Mechanisms of G1i2 regulation in tumour-induced osteolysis"

### **A/Prof Martin Lackmann**

Protein Interaction and Cancer Research Laboratory, Monash University

"Eph-on/Eph-off switches controlling cell positioning"

### **Prof Andras Nagy**

Mount Sinai Hospital, Samuel Lunenfeld Research Institute, Toronto

"Toward understanding somatic cell reprogramming to pluripotency"

### **Dr Marie-Odile Parat**

School of Pharmacy University of Queensland

"Caveolae and angiogenesis"

### **A/Prof. Duncan Campbell**

Molecular Cardiology Unit, SVI

"The human heart"

### **Mr Siddharth Rajakumar**

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"The role of purinergic signalling in kidney ischaemia reperfusion injury"

### **Ms Joanne Chia**

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"hCD39 overexpression is a potential strategy to improve islet engraftment after transplantation"

## Organisational Chart



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.

Diseases studied at SVI:

- Type 1 and 2 diabetes
- Obesity and heart disease
- Bone diseases such as arthritis and osteoporosis
- Cancer and the spread of cancer
- Infectious diseases such as Hepatitis and AIDS
- Alzheimer's and other neurological disorders

SVI is affiliated with St. Vincent's Health and the University of Melbourne and is a member institution of St Vincent's Health, Australia.

SVI hosts the National Serology Reference Laboratory and is a member of Bio 21; the Victorian Breast Cancer Research Consortium; St. Vincent's Diabetes Centre of Excellence; the Association of Australian Medical Research Institutes; and is accredited by the NHMRC. Through these links SVI provides a valuable service to clinical medicine, graduate education and community welfare.

## SVI staff, associates and students

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AssocDipApplSci VUT, BSc LaT

Hayley Moon, BSc(Hons) Deakin

Lisa Murray-Segal (from 2/11)

Matthew O'Brien, BSc(Hons)  
Melb; BA Melb (from 12/11)

Ingrid Poulton, DipHealthMLS  
RMIT, BMed&Appl Biotech  
Charles Sturt

Megan Russell, BSc(Hons) Melb

Natalie Sanders, BSc(Hons) Melb

Angela Tam, BSc(Hons) Melb  
(from 5/11)

Julian Tang, DipBiotech Temasek  
Polytechnic BSc(Hons) Melb

Nora Tennis, BSc Mon,  
GradDipMedLabSc Uni SA

Brett Tonkin, BSc(Hons) LaTrobe

Prerak Trivedi, MBiotech  
Swinburne, BPharm Gujarat India

Sylvie van Twest, BSc Uni West  
Ontario Canada, MSc Uni Guelph  
Canada (from 9/11)

#### Cardiac Technologists

Laura Mocioaca, BNursing Uni  
SA, Grad Dip Cardiac Tech QUT

Gladys Rodriguez, Cardiac Tech  
Caracus, Grad Dip Cardiac Tech  
QUT (to 4/11)

## SVI staff, associates and students

### Chief Technical Officers

Virginia Leopold, BSc(Hons) LaT  
Patricia Ho, BSc Mon

### Laboratory Co-Ordinators

Stacey Fynch, Dip App Sci Animal  
Tech NMIT

Ankita Goradia, BSc MSc Mumbai

### Laboratory Technical Assistants

Joshua Johnson, BA Georgia USA  
(from 9/11)

Tara Catterall, DipApplSc VUT  
(from 9/11)

### Laboratory Assistants

Manda Abdul Razak (to 4/11)

Duncan Campbell

Francoise Campbell

Sally Emini

Maria Felgendreher (to 2/11)

Sam Thorburn

### Project Officers

Caroline McBride

Vincent Murphy, BSc Melb,  
GradDip Biostats & Epid Melb

### Clinical Research Fellow

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

### Associates

#### 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), Mon

Gregory Steinberg, BSc PhD Uni  
Guelph; Snr Fellow (Medicine),  
The University of Melbourne,  
Snr Fellow, McMaster Canada

### Senior Associates

Lance Macaulay BSc(Hons) PhD  
Mon; Princ Research Scientist  
CSIRO; Snr Fellow (Medicine) St  
Vincent's and The University of  
Melbourne

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

### Associates

Julian Adams, BSc MSc Cantab ;  
PhD Massey

Renwick Dobson, BSc Chem &  
Biochem, PhD Canterbury UK ; CR  
Roper Snr Research Fellow, Melb

Nirupa Sachithanandan, PhD  
Melb; MBBS Mon; FRACP

### SVI Foundation

#### Director Development

Madeleine Whiting, BNursing  
ACU; PostGrad Dip Arts Mon  
(from 2/11)

#### Communications Manager

Anne Johnston, BSc(Hons) PhD  
Melb

#### Development Manager

Clare Lacey

#### Bequest Officer

Cas Bennetto, MA Charles Sturt  
NSW; BA France (to 4/11)

### SVI Administration

#### 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 and Communications Manager

Anne Johnston, BSc(Hons)  
PhD Melb

#### Grants Officer

Rachel Mudge, BSc(Hons)  
PhD Melb

#### Human Resources Manager

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Dip Bus Melb

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Virginia Leopold, BSc(Hons) LaT

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Lisna Wirrawan Liauw

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Kate Barnett

Steven Boz

Beth Castles

Laura Kantidakis (from 9/11)

Julie Malyon

Kathryn O'Connell

Dimitra Samaras

### IT Manager

Peter Tonoli, A/Dip IT Swinburne;  
Dip Mgt, Swinburne

### IT Support Officers

Mathew Eley, BA Melb; Microsoft  
Certified-CTS, MCITP; Apple  
Certified

Irene Esquivel

Christopher Ryan, BSc/BIS Melb

Jon Rhoades, BSc(Hons) BioChem  
York UK; Microsoft Certified-  
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### National Serology Reference Laboratory, Australia

#### Director

Susan Best, MAppSc RMIT  
MBA Melb

#### Consultant

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

#### Quality Manager

Roderick Chappel, BAgSc PhD  
Melb MASM

#### Marketing Manager

Wayne Dimech, BAppSc RMIT  
FAIMS MBA LaT

#### Scientists

Lena Arvanitis, BSc LaT

Thein Thein Aye, MBBS PhD  
Nihon University

Penny Buxton, BSc(Hons) Mon

Chris Chiu, BSc(Hons)  
Adelaide (to 3/11)

Stirling Dick, BSc Tasmania

Cathryn Dunkley, BSc LaT

Marina Karakaltsas, BSc LaT

Geraldine Kong, BSc Singapore,  
MSoc Sc Singapore

Sally Land, BSc(Hons) Dip Ed  
Melb

Mark Lanigan, BSc Swinburne  
(Hons) PhD Melb

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RMIT; Dip Lab Tech Vic

Tamara McDonald, BSc LaT

Susie-Jane Noppert, PhD Mon;  
BApp Sc (Hons)

Megan Pate, BSc(Hons) Melb  
(to 9/11)

Thu-Anh Pham, BAppSc;  
MAppSc RMIT

Kim Richards, BSc(Hons) VU

Derya Sahin, Vet Sc Turkey, PhD  
Ankara

Kathy Smeh, BSc(Hons) DipEd  
BEd MEd Melb

Robert Vinoya, BSc VU

Sandy Walker, BSc(Hons) LaT

Kim Wilson, BAppSc QIT PhD  
Melb

### Post Market Monitoring Team Leader

Guiseppe Vincini, BSc RMIT,  
MSc UK

### Logistics Co-Ordinator

Stephen Gilmour, BSc  
Salisbury UK

### Data Management and Website Officer

Rosanna Torzillo

### Laboratory Assistant

Frank Torzillo

### Executive Assistant

Alison Natoli

### Computer Systems Manager

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

### Office Manager

Louie Opasinov, BSc, DipEd Melb

### Training Coordinator / Records Administrator

Helen Hasler

### Postgraduate Scholars

#### Doctor of Philosophy

Michele Ashton, BSc(Hons) Melb

Jon Chee, BSc(Hons) Melb

Ling Yeong Chia, BSc(Hons)  
Murdoch, WA

Chen Gao, BSc Auckland;  
MSC Auckland

Devika Gunasinghe, BDS(Hons)  
MPhil U Peradeniya

Nicholas Hoch Dip Pharm Rio  
Grande do Sul

Guarang Jhala, BSc Pune;  
MSc Pune

Chacko Joseph, BTech-Industrial  
Biotech Chennai India

Sabine Jurado, MSc Nice

Suang Suang Koid,  
BSc(Hons) Melb

Xianning Lai, BSc(Hons) Melb

Hui Peng Lim, BHealthSc(Hons)  
Adelaide; BScMgt(Hons) Uni  
London, Singapore

Kevin Mittelstaedt, MSc Berlin

Alvin Ng, BSc(Hons) Griffith NSW

Hayley O'Neill BSc(Hons) Deakin

Walter Pfister, BSc(Hons) Melb

Cletus Pinto, BSc OUT BSc(Hons)  
Melb

Alice Schofield, BApplSc(Hons)  
Melb

Eliza Soo, BSc(Hons) Singapore

Anthony Tachtsidis, B  
BiomedSc(Hons) Mon

## SVI committees

Miralireza (Farzin) Takyar,  
MBBS Iran

Shanna Tam, BSc(Hons) Melb

Iris Tan BSc(Hons) Melb

Julian Tang, BSc(Hons) Melb

Jibran Wali, BSc Lahore; MBBS  
Lahore; MHSc Auckland

Nancy Wang, BSc(Hons) Melb

### **Doctor of Medical Science, Masters by Research**

Jennifer Collier, MBBS Melb,  
FRACP

### **Undergraduate Scholars**

#### **Bachelor of Science (Honours)**

Batool Albatat

Edward Chu

Rachael Costanzo

Allison Irvin

Andra Necula

Hong Quah

Ain Roesley

Sam Rudstein

Anthonius Ricardo Tan

Muhammad Zaid Zainuddin

#### **Masters of Science**

Geline Narekine

Jingjing Cai

#### **Undergraduate Research Opportunity Program (UROP)**

Harriet Dashnow

Hannah King

Aimee Khoo

Yue Li

Joshua Szanyi

### **Board Committees**

#### **SVI Audit and Finance Committee**

The purpose of the SVI Audit and Finance Committee is to assist the SVI 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 SVI Board on the appointment of the external auditors, direction of audit (without impacting on the auditor's independence) and the level of audit fees.

#### **2011 Committee members (independent):**

Ruth O'Shannassy (Chair),  
Anthony Burgess, Paul Holyoake,  
Janene Krongold and Michael  
McGinniss

2011 Committee members  
(management):

Thomas Kay and David Rees

#### **SVI Commercialisation and Intellectual Property Committee**

The purpose of the SVI 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 2011, the SVI 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. The Committee also oversaw SVI's IP out-licensing activities with various companies and reviewed SVI's Collaboration Research Agreements with academic partners.

#### **2011 Committee members (external):**

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

2011 Committee members  
(internal):

Thomas Kay, Michael Parker,  
Bruce Kemp and Tony Mason  
(Convenor)

### **Internal Committees**

#### **SVI Occupational Health and Safety Committee**

The Occupational Health and Safety Committee (OHS) meets on a monthly basis to deal with various health and safety operational issues at the Institute and devise policy in compliance with Victorian Occupational Health and Safety Act (2004) and Victorian Occupational Health and Safety Regulations (2007).

#### **2011 Committee members:**

Virginia Leopold (Chair), Jörg  
Heierhorst, Frosa Katsis, Ankita  
Goradia, Cameron Kos, Thomas  
Loudovaris, and 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. In 2011, the Committee obtained funds to the value of \$314,132 from seven successful applications.

#### **2011 Committee members:**

Michael Parker (Chair), David  
Murfit, Natalie Sims, Rohan Steel,  
Thomas Brodnicki, Anne  
Johnston, Julie Malyon





## Statement Of Financial Position As At 31 December 2011

	2011 (\$)	2010 (\$)
<b>ASSETS</b>		
<b>Current Assets</b>		
Cash and cash equivalents	13,153,786	14,556,068
Trade and other receivables	2,051,994	899,406
Other assets	51,172	241,110
<b>Total Current Assets</b>	<b>15,256,952</b>	<b>15,696,584</b>
<b>Non-current Assets</b>		
Trade and other receivables	250,000	250,000
Financial assets	2,824,956	2,614,110
Property, plant & equipment	7,859,523	8,631,915
<b>Total Non-current Assets</b>	<b>10,934,479</b>	<b>11,496,025</b>
<b>Total Assets</b>	<b>26,191,431</b>	<b>27,192,609</b>
<b>Current Liabilities</b>		
Trade and other payables	2,568,524	3,282,282
Short-term provisions	939,197	701,338
Funds held in trust for NSRL accrued leave	138,280	138,280
<b>Total Current Liabilities</b>	<b>3,646,001</b>	<b>4,121,900</b>
<b>Non-current Liabilities</b>		
Provisions	204,233	145,478
<b>Total Non-current Liabilities</b>	<b>204,233</b>	<b>145,478</b>
<b>Total Liabilities</b>	<b>3,850,234</b>	<b>4,267,378</b>
<b>NET ASSETS</b>	<b>22,341,197</b>	<b>22,925,231</b>
<b>EQUITY</b>		
Retained surplus	22,658,536	22,863,278
Reserves	(317,339)	61,953
<b>TOTAL EQUITY</b>	<b>22,341,197</b>	<b>22,925,231</b>

The Statement of Financial Position provided above, together with the attached Statement of Comprehensive Income and Statement of Cash Flows have been extracted from the audited general purpose financial statements of St Vincent's Institute of Medical Research. The summary financial information does not include all the information and notes normally included in the statutory set of financial statements. A full set of audited general purpose financial statements can be obtained upon request to the Chief Finance Officer. The statutory financial statements (from which the summary financial information has been extracted) comply with Australian Accounting Standards. The statutory financial statements were unqualified by the auditors, William Buck Audit (Vic) Pty Ltd.



## Statement Of Comprehensive Income For The Year Ended 31 December 2011

	Note	2011 (\$)	2010 (\$)
Revenue	1	15,135,998	15,714,128
Other income	1	5,042,860	4,986,568
Total revenue		20,178,858	20,700,696
Consumables and general research expenses		(4,482,852)	(4,936,146)
Employee benefits expense		(11,675,402)	(11,169,874)
Depreciation and amortisation		(1,918,271)	(1,758,827)
Administration expenses		(1,480,315)	(1,483,263)
Transfers to collaborators		(826,760)	(269,356)
Total expenses		(20,383,600)	(19,617,466)
<b>Surplus/Deficit for the year</b>		<b>(204,742)</b>	<b>1,083,230</b>
Other Comprehensive income			
Net (loss)/gain on revaluation of financial assets	2	(379,292)	(19,330)
<b>Total Comprehensive Income for the year</b>		<b>(584,034)</b>	<b>1,063,900</b>
<b>Total Comprehensive Income attributable to members of the entity</b>		<b>(584,034)</b>	<b>1,063,900</b>

### Note 1: Revenue and Other Income

#### REVENUE

##### Income from research activities:

- government grants for direct research	3-4	7,700,479	7,501,259
- other research grants		4,414,651	5,153,253
- government grants for operational support	3-4	3,020,868	3,059,616
		<b>15,135,998</b>	<b>15,714,128</b>

##### Other income:

- legacies, bequests, donations		2,254,894	2,840,222
- dividends from other corporations		146,843	168,819
- interest from other corporations		729,354	787,646
- contract services		1,763,663	813,994
- royalty		36,142	28,401
- other		111,964	347,486
		5,042,860	4,986,568

<b>Total revenue</b>		<b>20,178,858</b>	<b>20,700,696</b>
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## Statement Of Comprehensive Income For The Year Ended 31 December 2011

	2011 (\$)	2010 (\$)
<b>Note 2: Surplus/(Deficit) for the year</b>		
<b>(a) The following expenditure was incurred in determining the deficit:</b>		
Expenses		
- direct research	13,988,673	14,010,467
- operational support	3,649,896	3,578,816
	<b>17,638,569</b>	<b>17,589,283</b>
Transfer of funds to external, joint collaborators	826,760	269,356
Depreciation of non-current assets	1,200,524	1,041,080
Amortisation of non-current assets	717,747	717,747
<b>(b) Significant revenues and expenses:</b>		
<b>Unrealised (gain)/loss on market value of shares</b>	<b>(379,292)</b>	<b>(19,330)</b>

### Note 3: Grants – Commonwealth Government

National Health and Medical Research Council		
- Independent Research Institutes Infrastructure Support Scheme	1,360,360	1,509,894
- Research grants	7,062,785	6,688,451
Australian Research Council	424,303	607,865
Department of Innovation, Industry, Science and Research	213,391	204,943
	<b>9,060,839</b>	<b>9,011,153</b>

### Note 4: Grants – Victorian State Government

Department of Business and Innovation		
- Operational Infrastructure Support Program	1,660,508	1,549,722
	<b>1,660,508</b>	<b>1,549,722</b>

## Statement Of Cash Flows For The Year Ended 31 December 2011

	<b>2011 Inflows (Outflows) \$</b>	<b>2010 Inflows (Outflows) \$</b>
<b>Cash flow from operating activities</b>		
Grants received	13,969,612	15,179,138
Payments to suppliers and employees	(18,242,282)	(16,991,859)
Donations, legacies and bequests	2,254,894	2,836,922
Other revenue	1,588,595	1,096,773
Interest received	616,073	648,185
Dividends received	146,843	168,819
<b>Net cash generated from operating activities</b>	<b>333,735</b>	<b>2,937,978</b>
<b>Cash flow from investing activities</b>		
Payment for property, plant, equipment and fittings	(1,145,880)	(1,357,229)
Purchase of motor vehicle	-	(38,914)
Payments for available-for-sale investments	(590,138)	(654,948)
Net cash used in investing activities	(1,736,018)	(2,051,091)
<b>Net increase/(decrease) in cash held</b>	<b>(1,402,283)</b>	<b>886,887</b>
Cash and cash equivalents at the beginning of the financial year	14,556,068	13,669,181
<b>Cash and cash equivalents at the end of the financial year</b>	<b>13,153,786</b>	<b>14,556,068</b>

## Private donors, bequests and foundations

### \$300,000 plus

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### \$100,000 – \$299,999

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### \$50,000 – \$99,999

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**We would like to thank the 1000 Club subscribers for 2011**

### **In memorial donations during the year were given in memory of:**

Harold Alexander  
James Whittington  
Jeff Clifton  
Margaret Fankhauser

### **Trusts & Foundations permanently established for the purpose of allocating funds to St Vincent's Institute on an ongoing basis:**

DJ & LM Fox Foundation – administered by Nicholas O'Donohue & Co

John Holt Medical Research Endowment – administered by Perpetual Trustees

K & A Bongiorno Research Endowment – administered by Perpetual Trustees

The Mary Jane Polinelli Foundation – administered by Perpetual Trustees

### **The following permanent funds are included in the company's pool of invested funds with income being directed to the Institute's medical research program:**

Albert H Maggs Endowment  
Diane B Jones Endowment  
George Menzies Carson Bequest  
Laura Sampson Lamb Estate  
Lorna M Miller Endowment  
Mary T Porter Estate  
Merna Dorothea Sheahan Estate  
The Mary Potter Research Grant  
The Roslyn Smorgon Memorial Fund

## Trusts and Foundations

### **Thank you to the following Trusts and Foundations that granted support based on scientific merit in 2011:**

L.E.W. Carty Charitable Fund  
The Jack Brockhoff Foundation  
The Nissen Samuel Charitable Foundation as administered by Perpetual Trustees  
The E.J. Whitten Foundation  
Angior Family Foundation  
The Marian and E.H. Flack Trust  
The Ramaciotti Foundations  
The JO & JR Wicking Trust, managed by ANZ Trustees  
Victorian Community Foundation – James & Vera Lawson Trust, managed by ANZ Trustees  
The Leslie Family - The Bill Heath Fellowship donated in memory of Stuart Leslie  
The Margaret Walkom Bequest  
National Breast Cancer Foundation  
DJ & LM Fox Foundation  
Diabetes Australia Research Trust  
Bethlehem Griffiths Research Foundation  
The Lynne Quayle Charitable Trust Fund as administered by Equity Trustees  
The Harold Mitchell Foundation  
The Leukaemia Foundation  
Australian Cancer Research Foundation  
Cure Cancer Australia Foundation  
Juvenile Diabetes Research Foundation

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## Jack Holt's dream lives on through his enduring gift

Medical research and racehorse training are poles apart. However, the successes of the late Jack Holt, one of Australia's greatest trainers, led to the establishment of the internationally recognised St Vincent's Institute of Medical Research.

Many do not know that John 'Jack' Holt, the famous Melbourne racehorse trainer known as 'the Wizard of Mordialloc', was also one of the great philanthropists of his time. Jack's acts of generosity were made in a quiet and unassuming manner.

After a short career as a jockey, Jack Holt became a trainer in 1902. From 1918, he dominated Victoria's training ranks, winning the Trainers' Premiership 13 times, and training winners in a Melbourne Cup, two Caulfield Cups, six W.S. Cox Plates and a VRC Derby.

When Jack died in 1951, he left a bequest of £200,000 (an enormous sum in those days) to establish a school of medical research at St Vincent's. St Vincent's School of Medical Research officially opened on 23 April, 1958. In 1984 it was renamed St Vincent's Institute of Medical Research (SVI).

In the more than 50 years since that time, discoveries from SVI have advanced treatments, offering hope to sufferers of diabetes, cancer, arthritis, osteoporosis, obesity and cardiovascular disease.

Our scientists and researchers are considered amongst the world's best. They come to work each day striving to give hope to people suffering from disease.

Jack is remembered as a very generous and gentle man, passionate about medical research.

**The Jack Holt Society has been established to honour the generosity of those individuals who have pledged a gift in their Will for the purpose of the ongoing medical research at St Vincent's Institute.**

**Medical Research is vital for a healthy future for all of us. A gift in your will is a lasting gift that will enable your support to live on.**

**For a confidential discussion or further information about the Bequest Society, please contact Clare Lacey on 9288 2480 or 0408 766 686.**



**1879 – 1951**

**Thank you to our other 2011 supporters:**



**Discovery Day:**



StageRight – Ditto Design – Crocmedia – The Slattery Media Group – Mitre Tavern – President's Cup – The Footy Show – Salt & Pepper

**SVI Charity Golf Day:**



Ausenco – Barclays Capital – BP Australia – Byrnescut Mining – Coffey Geotechnics – Credit Suisse – Dwyer Corporate – Ernst & Young – Fluor – Maxxia – Minter Ellison – Orica Limited – Pinnacle Drilling – PwC PriceWaterhouseCoopers – Sinclair Knight Merz – Tenix – Traverse Drilling – Westpac Institutional Bank

Mizuno – Royal Melbourne Golf Club – MGI – Jonathan's – Rockpool – Winestyle – Toscano's – Travelscene – Richmond Seafood Tavern – Crown – Melbourne Victory – Richmond Football Club – Victorian Rugby Union – GRV Printers – Wagstaff – Art Series Hotel Group – IMG – Kinrome – MoVida – Poseidon Oysters & Seafood – SureShot GPS – Tassal – SmithandRowe – Able&Baker

# Donating to SVI

By supporting SVI's medical research, you can make a difference.

## 1. Donate now to SVI

I want to make a single donation of:

- \$25    \$50    \$100    \$250    \$500    \$1000  
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## 2. Join the SVI 1000 Club

I want to make an annual donation of \$1000 for:

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## 3. Join the SVI \$10,000 Discovery Fund

An investment in the \$10,000 fund is an investment in the future needs of the Institute. For more information contact Madeleine Whiting on (03) 9288 2480

## 4. Leave a bequest to SVI

If you would like to talk to someone about making a bequest to SVI please contact Clare Lacey on (03) 9288 2480

**See our website, [www.svi.edu.au](http://www.svi.edu.au) if you would like to make periodic payments from your bank account or credit card.**



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9 Princes St, Fitzroy, VIC 3065 Tel: 03 9288 2480 Fax: 03 9416 2676  
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