From the bench to the bedside and back again:
Researchers and clinicians teaming up to fight cancer, heart disease and type 1 diabetes.
In a budget otherwise cautious about spending, it was encouraging to see the government’s strong commitment to Australian medical research, with the announcement of a proposed $20 billion endowment fund.

The Fund is consistent with the recommendations of the McKeon Strategic Review of Health and Medical Research, which attracted bipartisan support. It will secure the future of Australian medical research by effectively doubling the Government’s investment over the coming decade. This is a long-term, solid investment and an exciting moment for the sector.

There are obviously concerns in the community about how the measure will be funded, and the consequent challenges it will face in the Senate. While acknowledging these difficulties, we see the Fund as paving the way for a new, secure funding model for Australian research and innovation into the future.

At SVI, our researchers continue to work towards finding treatments for common diseases that are faced by many Australians. We have addressed the difficult funding situation in recent years by developing a strong philanthropic effort at SVI. The SVI Foundation is 10 years old this year and goes from strength to strength.

Of course long before the SVI Foundation, the Institute was founded by a generous bequest from racehorse trainer Jack Holt. We are very grateful to all those who support the Institute, but I particularly want to mention the members of the $10,000 Discovery Fund, the SVI Charity Golf Day Committee (and long-term sponsor Newcrest Mining), the SVI Support Group and the Susan Alberti Medical Research Foundation.

At SVI, we are also following the advice of the McKeon Strategic Review of Health and Medical Research. The Review concluded that effective medical research should be closely entwined with the healthcare system. A strong competitive advantage for us is the close connection with St Vincent’s Hospital, which helps to keep our scientists focused on research into the real world problems faced by patients.

We have been working to make our relationships with clinicians stronger. You will read about the interaction between SVI researchers Louise Purton, Carl Walkley and their collaborator Dr Meg Wall, from St Vincent’s Hospital and between cardiologists David Prior and Jock Campbell in this newsletter. These contributions are highlighted further in our recently released SVI Research Report (2013-14).

Joint appointments will be a feature of the planned Aikenhead Centre for Medical Discovery, which will foster cross-disciplinary research on our campus. This, and the possibility of secure future funding, mark an exciting period ahead for our sector.

TOM SAYS

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Sudden cardiac death was brought to the world’s attention in 2004, when Hungarian footballer Miklós Feher died on the field during a televised football match in Portugal. At around the same time, Associate Professor David Prior became interested in elite athletes and the changes that are wrought on their hearts by their exercise regimes.

David says, “It is not surprising that an elite athlete’s heart adapts to the need for more oxygen and higher blood flow by increasing its size. However, sometimes these changes can mask more serious problems that put the athletes at risk of cardiac arrest.”
SVI researchers Louise Purton and Carl Walkley describe Dr Meg Wall as a master mouse pathologist. Meg originally trained as a haematologist (specialist in blood disorders) but now works as a cancer cytogeneticist: an expert at detecting genetic aberrations in cancer samples.

Meg is one of only two people in Victoria trained in this specialist area. “Our laboratory at St Vincent’s Hospital provides a state-wide service for cancer cytogenetics analysis. This means that we receive samples from patients throughout Victoria to aid diagnosis and assess remission or relapse in response to treatment,” she says.

Meg is also a researcher. She did her PhD at the Peter MacCallum Cancer Centre, where she got to know Louise and then-PhD student Carl. Meg’s major research interest since finishing her PhD has been in the group of diseases collectively known as myelodysplastic syndromes (MDS).

MDS is a malignant blood condition found most commonly in people over the age of 65. Meg says that the incidence of MDS is rising, partly because of increased lifespans and partly due to our success at treating other cancers. Some cancer survivors develop MDS as a result of genetic changes caused by chemotherapy. In Meg’s clinical role she analyses samples from patients with MDS to help with diagnosis and treatment decisions.

MDS is also a major focus of Louise and Carl, now co-heads of SVI’s Stem Cell Regulation Unit. The trio is undertaking work together to find new ways to treat the disease. “Louise and Carl do clever things with mice that help us understand why people get MDS and what we can do to fix it,” says Meg. “We don’t have a good understanding of the initial changes that lead to the development of MDS, and the studies going on at SVI are allowing us to look at ground zero.”

“We are really bringing together the two ends of the spectrum,” says Louise. “At SVI, we can manipulate mouse genes to allow us to explore human disease, and Meg is expert in interpreting the changes we see in the mouse genome, in the context of what happens in humans.”

With this convergence of research and clinical expertise, the team is poised to make some major discoveries to aid people diagnosed with MDS.

David is a cardiologist at St Vincent’s Hospital and an expert in cardiac imaging: the study of the structure and function of the heart using ultrasound and magnetic resonance imaging. This expertise led him to be asked to assess the heart health of the Socceroos playing in the 2006 World Cup as well as to advise the AFL on the heart health of their footballers. David’s interests extend to the heart health of those less athletically gifted.

For the last 8 years, he has used his skills in collaboration with SVI’s Associate Professor Jock Campbell in a community-based study that assesses the heart health of a group of 4000 at-risk people. The study aims to track the effectiveness of a marker in blood called B-type natriuretic peptide to predict heart failure. The team’s goal is to improve our ability to identify those at risk of the disease. David says, “We have available therapies for the treatment and prevention of heart failure, but what we don’t have is a very effective way of screening to identify who would benefit from the treatments.”

The researchers are keen to learn more about how changes in the heart’s structure can affect its function, and to be able to identify the cases where these changes may confer an advantage, as in the case of some elite athletes, and where they may have more disastrous consequences.
Dr Esteban Gurzov joined the Immunology and Diabetes Unit in 2013 as a postdoctoral scientist. Esteban did his PhD at the Universidad Autónoma de Madrid in Spain and was recently awarded an Advanced Postdoctoral Fellowship from JDRF and an NHMRC New Investigator Project Grant.

Where were you born?
In Rosario, Argentina, a city located 300 km at the north of Buenos Aires (the capital).

What made you interested in science?
When I was a kid, my father got me Carl Sagan’s book Cosmos, and I loved it. I used to write letters to NASA and receive envelopes with the logo and pictures of the space missions. Back then, my aim was to understand the universe… maybe too ambitious, so eventually I decided to start with the cell and became a molecular biologist.

Why medical research?
The legacy. It doesn’t matter if you are a Nobel laureate or a small scientist because we are contributing to one of the most relevant human activities. It is demanding but also a lot of fun! I’ve worked in South and North America, Europe, and now Australia. Science is a universal language and it’s fantastic that we can travel around the world with our passion.

Why type 1 diabetes?
It’s a disease that affects many young children with a strong component of molecular biology that we just simply don’t understand.

Describe your research in layman’s terms and why it interests you.
We are trying to understand how the cells that produce insulin in the pancreas are destroyed during diabetes. We are also designing novel molecules that, if successful, will allow us to detect the disease before the irreversible loss of the pancreatic cells occurs. This will result in more efficient treatments.

What are your career aspirations?
To reach the point where I can look back and see that all the sacrifice, effort and hard work was worth it.

The Centre is now delivering islet transplantation to people across Australia suffering from life-threatening type 1 diabetes. “This is a tremendous achievement for Victoria and demonstrates that St Vincent’s Hospital and SVI are truly world leaders in the treatment of type 1 diabetes,” Mr Davis said.

Islet cell transplantation is a complex, highly specialised medical procedure where cells that produce insulin are taken from a donor pancreas and transplanted into the liver of a recipient with difficult to treat type 1 diabetes. “Few hospitals in the world are able to provide this level of specialist treatment for people with type 1 diabetes,” Mr Davis said.
The procedure requires specially trained scientific staff and a state-of-the-art laboratory to isolate and extract the islet cells that continue to produce insulin.

Mr Dutton said the Nationally Funded Centre Program provides access for all Australians requiring specified complex procedures, with all states contributing to a national funding pool.

“This facility has boosted Australia’s capacity to develop and manufacture human cell and tissue based therapies, assisting in the islet cell transplantation program at St Vincent’s Hospital and SVI.”

Head of the Centre at St Vincent’s, Professor Tom Kay, said, “Our aim is to ensure that Victoria has the capacity to provide high quality, effective, and safe islet transplantation at the most affordable cost. Since its inception, the transplant program has made a real difference to those with difficult to treat type 1 diabetes, and their families.”

The National Program has now carried out a total of 46 transplants into 22 patients, eight of which have been done at St Vincent’s Hospital. In addition to the patients transplanted in Melbourne, the Melbourne-based team has also provided islets for five transplants done in Adelaide.

Jade’s husband Michael was diagnosed with type 1 diabetes when he was 16. Their son Juston was just 4 when he was diagnosed.

“I met Michael when I was 18 and he was 20. He had had type 1 diabetes for just over 3 years. He needed to inject insulin four times a day and if he was ‘low’ he needed a sugar fix. It was a general consideration in our lives, but there didn’t seem to be much to worry about... little did I know!

It was our son Justin’s first week at 4 year old kinder. He had needed to go to the toilet a few more times than usual over a couple of days and I told Michael that I was worried. Seeing as we had Michael’s glucometer at home, we tested Justin. His level was so high that the meter couldn’t show the count, it just read ‘HI’. We rushed him to the hospital and on that day – 3rd of February 2013 – Justin was diagnosed with type 1 diabetes.

As time passed, we became accustomed to the routines that were essential for Justin’s well being. We make sure that we have lots of family conversations about carbohydrate counting, weighing and measuring, testing, insulin doses, emotions and everything else that goes with living with type 1. Michael is a great role model for Justin – showing that the condition won’t stop him from doing anything he wants to do.

As Justin matures, he will be able to take on some of the responsibility for himself. But for now, we want him to live a carefree childhood, with type 1 in the background. We are concerned about the effect that diabetes may have on Justin’s future health, but we know that we are doing everything possible to prevent or delay possible complications. We are confident that research will come up with better treatment options and eventually a cure.

We have been very excited to read about islet transplantation. It is an amazing feeling to think that one day Justin and Michael may live without the burden of type 1 diabetes because of research and technology advances such as these. We hope for a cure!”

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Proceeds from the day were donated to SVI, with $6000 raised. SVI is now hoping to build up a partnership with the Banks Group as their charity of choice.

You may recognise the logo on the Western Bulldogs women’s team jumpers when they play Melbourne at Etihad Stadium in late June. The Bulldogs will proudly be wearing SVI’s logo to promote the Institute. Sue presented the jumpers to players at the second annual AFL Women’s Draft in May.

We thank the Banks Group Charitable Foundation, the Western Bulldogs and the Victorian Women’s Football League for their ongoing support and of course, Sue, for her dedication and tireless work in promoting SVI.

The event was held to recognise and acknowledge SVI’s regular financial supporters. It also enabled the Institute to engage with a broader base of loyal donors, as well as encourage new friends to embrace SVI and champion the cause.

Image: Speakers from ‘The Great Sugar Debate’, Prof Helen Truby, Ms Karen Inge and Prof Rob Moodie
Learn what it takes to make a breakthrough, hear about the cutting edge of medical research and discover what researchers at SVI are doing to help Australians affected by disease.

SVI researchers regularly host tours of their labs. They relish the opportunity to explain their research to their guests and enjoy meeting people with an interest in the disease to which they dedicate their time.

This year alone SVI has opened its doors to the Melbourne Osteoporosis Support Group, the RACV Bridge Club, the Glen Waverley RSL, politicians including Michael Sukkar MP, Federal Member for Deakin and Michael Gidley, State Member of Parliament for Waverley as well as a number of patients and their families who have been affected by the diseases that we study.

In March, arthritis was the focus, with a dinner and presentation by Associate Professor Natalie Sims. On June 16th, SVI held its annual cardiac dinner with a group of loyal supporters who have an interest in the area.

Tours take about one hour and can be tailored to suit your availability and interest in a particular disease area.

If you would like to tour the Institute and find out more about our research, contact Madeleine Whiting on (03) 9288 2480 or email us on: foundation@svi.edu.au.

Can you help?

In order to bring our research to life and make it more meaningful to our readers we are looking for personal stories of experience with disease and health outcomes. If you are interested in sharing your story with us and allowing us to use it in our written materials, please call the SVI Foundation on (03) 9288 2480. We have a volunteer who will then contact you and write up your story for our supporter communications.

SVI holds a number of internal and third party fundraising events every year, the profits from which often come from auction and raffles. To make these a success, we are seeking donations of auction and raffle prizes. It is often the ‘money can’t buy’ experiences or gift vouchers and accommodation that are the most popular.

Please email foundation@svi.edu.au or call Lara on (03) 9288 2480 if you can assist.

This year SVI’s Annual Charity Golf Day will be held on Monday, 20th October. SVI is excited to announce that Macquarie Leasing have come on board for the second year running as the naming sponsor for the popular event.

For the last 6 years the Golf Day has been a huge fundraiser for the Institute, bringing in over $500,000.

This year we are in the unique position of being able to offer our supporters the opportunity to be part of the day. If you are interested in taking up a gold, silver or bronze sponsorship or joining a team as an individual, please visit www.svi.edu.au/support/join/svi_golf_day or call Lucy from the SVI Foundation on (03) 9288 2391. Make sure to get in quick as spots for the day are filling fast.
Burns specialist Professor Fiona Wood AM inspired a packed house at Leonda by the Yarra in Hawthorn at the second Susan Alberti Medical Research Foundation Mother’s Day Luncheon in May. The event was a huge success, raising an incredible $32,000 for SVI’s ‘Susan Alberti Women in Research Award’.

The lunch is now an annual event, dedicated to raising money to support the careers of women in research at SVI. The Award, named in Sue’s honour, aims to support the work of an outstanding female scientist by helping to alleviate the adverse impact on their research caused by maternity leave. The most crucial years in a female researcher’s career commonly coincide with child-bearing and raising a family.

“When you consider it takes about 12 years to become a fully fledged researcher, it is really important to put things in place to support female researchers so they can continue with their work and still have a family,” says Sue.

Fiona Wood encouraged guests to support the Award, saying that women have to go the extra mile to succeed in their career and raise a family. Fiona managed to develop a successful career and raise six children, with great support from her husband (also a surgeon) and with a good attitude. “It is not weakness to accept help,” she said.

The Women in Research Award recipient for 2014 was structural biologist Dr Sophie Broughton, who attended the lunch with her husband Daniel and baby Alex to accept the Award.

“The main problem with maternity leave is that it means for a period there is a decrease in scientific output – it impacts on experiments, publications and the outcomes of research,” says Sophie. She continues “The Award really takes the pressure off because it allows me to have a presence in the laboratory, even though I am not physically there, and allows me to spend that time with my baby. I am very grateful to everyone who donated and am honoured to have been selected for this Award.”

If you would like to make a financial contribution to the Women in Research Award please use the donation form attached.
More than 300,000 people live with dementia in Australia today. Alzheimer’s disease is the most common form of dementia. The financial cost of Alzheimer’s in Australia is estimated at $3.6 billion per year, but the emotional cost to individuals and their families cannot be measured.

Researchers at SVI are working to develop new treatments to combat this crippling disease.

Erena tells the story of how Alzheimer’s disease has affected her family.

“When Mum was diagnosed with early onset Alzheimer’s disease in late November 2006, she was 59 years old. A former solicitor and barrister, Mum was an avid reader and formidable opponent in any argument. The diagnosis was a tragedy for someone with so much spirit and wit.

Mum had had a brain tumor removed 2 years earlier and during her recovery some of the symptoms such as forgetfulness, confusion and anger that had led to her tumor diagnosis were returning.

After plenty of tests and scans, mum was diagnosed with early onset Alzheimer’s. Whilst our family was devastated, Mum was completely detached from the diagnosis and she simply wasn’t interested in the fact she had Alzheimer’s disease.

For a few years, Mum went on with her life as if there was nothing wrong. She had a busy social life, and many people did not know about her diagnosis. The progression of the disease meant she didn’t realise what she couldn’t do. Gradually though, as her symptoms became more pronounced, she was no longer was able to drive or read, and her forgetfulness and confusion became overwhelming. Slowly, as her abilities lessened her life became considerably quieter and she spent her time with Dad at home where she needed constant care.

Last year, nearly 7 years after her initial diagnosis, her condition deteriorated to the point that Dad was no longer able to care for her and she was moved into an aged care home.”

SVI’s Professor Michael Parker leads a group of researchers who are working on a molecule that has the potential to stabilise memory, with the hope of developing new treatments for Alzheimer’s.

Through this pioneering research, the team hopes to be able to make a difference to people like Erena’s mother.

But to do this we need your financial support. Please use the donation form attached if you would like to contribute to our work into Alzheimer’s disease and other projects like it.
DONATING TO SVI

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

1. Donate a single gift to SVI
   - $50
   - $100
   - $250
   - $500
   - $1000

   Other $  

2. Become a ‘Friend of SVI’
   Donate a regular gift:
   - Monthly gift amount $  
   - Annual gift amount $  

3. Join the SVI $10,000 Discovery Fund
   An investment in the $10,000 Discovery Fund is an investment in the future of the Institute. For information, contact Dan Mars at the SVI Foundation on (03) 9288 2480.

4. Consider SVI in your Will
   If you would like to talk to SVI about a bequest in your Will, contact Madeleine Whiting on (03) 9288 2480.

See our website, www.svi.edu.au if you would like to make periodic payments from your bank account or credit card.

Donation payment details

- Cheque (please make payable to St Vincent’s Institute)
- Credit card (please tick one of the following cards and complete details)

Card type (please tick)
   - Diners
   - Visa
   - Mastercard
   - Amex

Expiry date

Amount being paid $  

Name on card

Signature

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