

Finding cures for cardiovascular disease through world class medical research

Annual Report 2017



110

Contents

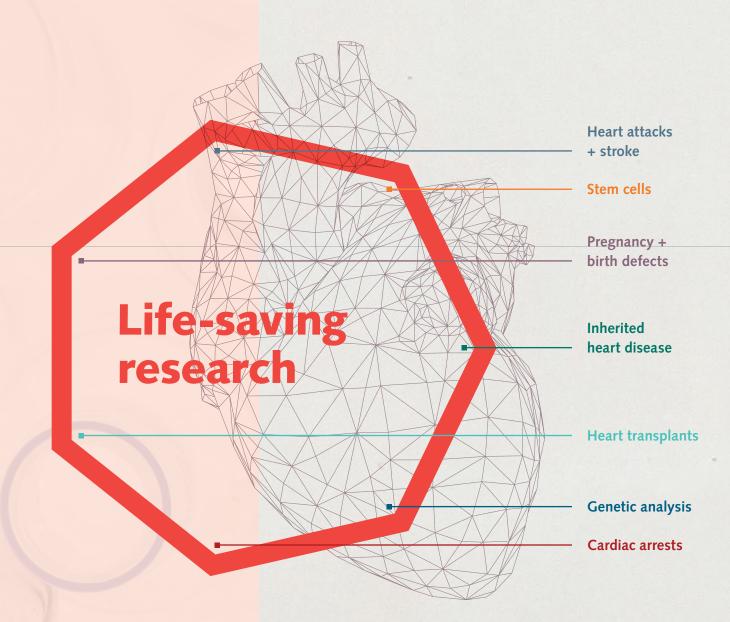
SUBJECT

About Us	02			
MAKING A DIFFERENCE Leo's Story	04			
Chairman's Report				
Executive Director's Report				
Organisational Structure				
Board of Directors				
DISCOVERIES Baby Brain	16			
DISCOVERIES Preventing Fatal Heart Attacks	20			
DISCOVERIES Yesterday's Science, Tomorrow's Technology	24			
DISCOVERIES Fishing for Clues	26			
MAKING A DIFFERENCE Kiran's and Miranda's Stories	30			
Research Divisions				
The Victor Chang Innovation Centre				
Fundraising Events				
Sohn Australia Hearts & Minds				
Investment Leaders Conference				
Achievements and Awards				
Statement of Income and Expenditure				
Victor Chang Health Check Booth				
Supporters and Acknowledgments				
Support Life-Saving Heart Research				

PAGE NO.

17.5 million

people worldwide die from cardiovascular disease every year



12min

One Australian dies from cardiovascular disease every 12 minutes



3×

Women are three times more likely to die from heart disease than breast cancer

About Us

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The Victor Chang Cardiac Research Institute is dedicated to finding cures for cardiovascular disease through world class medical research.

Renowned for the quality of our breakthroughs, the Victor Chang Institute uses innovative transplantation techniques, advanced stem cell research, bioengineering, and complex molecular and genetic analysis – to discover better ways to diagnose, treat and ultimately prevent the onset of heart disease.

Our Mission

The relief of pain and suffering, and the promotion of wellbeing, through an understanding of the fundamental mechanisms of cardiovascular biology in health and disease.



Our Values

Excellence: to achieve excellence in research

Creativity:

to demonstrate creativity in the pursuit of scientific discovery

Integrity:

to act with honesty, integrity and fairness at all times

Impact:

to undertake research that has significant impact and makes a difference

Teamwork:

to promote a sense of teamwork and collegiality amongst staff and collaborators

Our 2017 Statistics

306

researchers and staff

122

scientific publications

24

laboratories

10,002

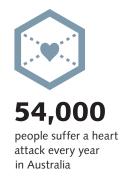
people tested by the Victor Chang Health Check Booth

1,031

people toured the Victor Chang Institute

Health Impact

Cardiovascular disease is the leading cause of death globally. It claims the life of one Australian every 12 minutes and can affect anyone regardless of age or gender. As Australia's most expensive disease, it currently costs more than \$7.6 billion in healthcare expenditure per year.



Making a Difference

At the Victor Chang Cardiac Research Institute there is nothing more rewarding than watching a patient recover and lead a happier, healthier life. It's the reason we do what we do every day – to help people.



JACINTA, LEO'S MUM

There were times I thought we were really going to lose him, but he has shown us how to be strong, just like him.

Leo's Story

"We found out Leo had a severe heart defect when I went for my routine 20-week ultrasound. The paediatric cardiologist confirmed that our little boy had hypoplastic left heart syndrome; our baby would be born with half a heart. I can't tell you how broken my own heart was that day. We were scared and unsure what this meant for him, but we knew if he's anything like his mum, dad and sisters, he'd have a big fighting spirit!

At three days old he was whisked away for the first of three open heart surgeries. We waited seven long, agonising hours for the surgery to be finished and when we finally walked into intensive care my feet felt like concrete. I remember Leo lying there with tubes, drains and machines coming out of everywhere, and thinking 'how did this happen?'. After two weeks we finally got to hold our baby boy for the first time.

Five years on, we know the future is uncertain and at any time things can change for us. Leo can go into cardiac arrest at any moment, but we roll with the punches and take it a day at a time. There will be more good days and bad ones too, but our Leo is everything we had dreamed for him. Despite having half a heart, Leo is a very happy little boy with an even bigger personality. As my husband says, he has more heart than anyone we know, and I think I'd have to agree".

Justin and his siblings

his dad,

in hospital again
 his mum, Jacinta, h

first open heart surgery

a. Leo after his
b. Leo back in F
c. Leo with his r



42 babies are born with a heart defect every week

Research Update

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Giving back to medical research, Leo and his parents have donated tissue samples to Professor Richard Harvey's laboratory at the Victor Chang Institute to help its ground-breaking investigations into hypoplastic left heart syndrome. Professor Harvey is using renewable stem cells to search for a genetic pattern that leads to childhood heart disease.

VICTOR CHANG CARDIAC RESEARCH INSTITUTE

Chairman's Report

In the world of science, it's not often that truly remarkable discoveries are made which have the potential to positively impact millions of lives around the world. So, it is with great pride that we reflect on the incredible discoveries made by Professor Sally Dunwoodie and her team at the Victor Chang Cardiac Research Institute, which were published in the prestigious *New England Journal of Medicine* on 10 August, 2017.

These discoveries, which are now being further investigated, may lead to a change in the way that all pregnant women are managed to minimise the risk of certain potential birth defects, including heart defects.

These achievements are a reflection of the capability of our world class team of over 300 researchers and staff, guided by our scientific leadership team, who themselves have been responsible for some extraordinary ground-breaking discoveries over the past 24 years.

Importantly, whilst there has been enormous progress in treating cardiovascular disease (CVD) during this time, it remains the main cause of death and disability, and imposes the highest level of economic burden of all disease groups in Australia.

There are also signs that we are at risk of a resurgence of CVD in Australia with, as an example, higher incidences of atrial fibrillation and general heart failure for the middle aged. This will of course lead to an even higher future cost to the NSW and Federal Health Budgets.

Because of this dichotomy, the Victor Chang Institute's Board and management have been particularly focused this past year on increasing the awareness at both the Federal and NSW Government levels of the importance and urgency of increasing their investment into cardiovascular research.

Sydney is one of the world's major global cities and NSW is Australia's most productive State and its community deserves and expects to be able to get the world's best treatment and care for cardiovascular disease, particularly in Western Sydney and regional areas where the incidence of heart disease is greatest.



In this regard, I'm pleased to report that the NSW Government clearly recognises this need and, together with the NSW Cardiovascular Research Network, we have made good progress towards securing long term, ongoing investment in cardiovascular research across the State.

At the Federal level, we welcome the Government's continued commitment that the Medical Research Future Fund (MRFF) will be fully capitalised by 2020/21 and provide long term funding to those important areas of research, such as cardiovascular disease, which have the highest social and economic burden. As the former deputy Chairman of a working group that included representatives from most of Australia's large medical research institutes and universities, which fought hard to ensure the establishment of the MRFF, I am hopeful the MRFF can be used to set a long term path for growth in medical research funding in Australia. This would help attract international scientific talent and private capital to this field of discovery, and have a positive economic multiplier effect following the path of other successful nations in this area. such as Israel and Singapore.

"

This resurgence of cardiovascular disease comes at a time when funding for medical research and, more alarmingly, funding for cardiovascular research in Australia and in particular NSW, remains in steady decline.



"

Given the recent decline in funding from the National Health and Medical Research Council, coupled with a commitment by the Board to maintain our leading research activities across the Victor Chang Institute, we have had to fund part of our operations from our reserves which has placed an even greater reliance on philanthropic support for the Institute's ongoing research.

In this regard, I wanted to thank our many regular supporters, our major donors, our corporate sponsors and our fundraising partners for their continued generosity and for sharing our long-term vision for the Victor Chang Institute.

In November, the leading investment minds from around the world gathered for a second year to share their best investment idea at the Sohn Australia – Hearts and Minds Investment Leaders Conference at the iconic Sydney Opera House on 17 November, 2017. The conference brings together the local funds management community to raise awareness and investment into Australian medical research. It has been a privilege to work alongside such a committed Board who is focused on developing the Victor Chang Institute's supporters and maintaining its excellent reputation.

Fundamental to the financial success of the conference is the generous support that we receive from our partners including the fund managers who donate their time to speak and make financial contributions, our major sponsor, Commonwealth Bank, and The Ainsworth and The Paul Ramsay Foundations.

The Western Australian business community demonstrated their continued commitment to cardiovascular disease research at our annual cocktail party held in Perth in May. We were joined on the night by some of our most valued supporters including Mimi Wong who is a Victor Chang Institute Ambassador, and trustees of the Perth based Simon Lee Foundation. The warm generosity of Steven and Judy Lowy enabled our Board to host a special Cocktail Party on board the super yacht, "Hey Jude" in October. The night raised vital funds for the Victor Chang Institute's cutting edge Cardiogenomics Program, which is working to make whole genome sequencing a standard diagnostic test so that our researchers can develop effective new treatments and drive personalised medicine for patients with, or at risk of, developing cardiovascular disease.





I thank each and every one of our Board members and in particular David Craig, our Deputy Chairman, who also Chairs the Victor Chang Institute's Finance and Risk Committee and takes the lead on some of its nonscientific projects. In particular, David was instrumental in forging a closer alliance with UNSW Sydney, which will help underpin continued collaborations across both organisations and provide the Victor Chang Institute with important funding support for its research. I would also like to extend a warm welcome to Annabel Spring formerly from Commonwealth Bank, who joined the Board in March 2017.

As many of you will know, Sister Anthea Groves has played a very important role at the Victor Chang Institute over many years, in particular since joining the Board in 2003. Hence her retirement from the Board last year was met with great sadness. Thankfully, because of Sister Anthea's great work and support over many years her presence is still felt throughout the organisation and the Institute's mission continues to build on the traditions of the Sisters of Charity.

Finally, a very special thanks and congratulations to all our researchers. scientists and administration staff and in particular the Victor Chang Institute's founding Executive Director, Professor Bob Graham, who drives the overall scientific performance of the Institute and continues to inspire our researchers and fosters the development of so many young scientists across the organisation. I must say it has been a great honour and also most enjoyable working alongside Bob on a range of projects over this past year.

Congratulations on a wonderful year.

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Matthew Grounds CHAIRMAN



Executive Director's Report

In 2017 our scientific achievements remained very strong. One of the highlights this year was an impressive discovery from Professor Sally Dunwoodie's laboratory, which gained significant media attention around the world.

Sally and her team described a double discovery: the molecular basis for repeated miscarriages and multiple birth defects, as well as the identification of a simple potential cure, using a vitamin supplement. Importantly, these discoveries may not just be applicable to a few, rare families around the world, but may lead to a change in the way all pregnant women are cared for, much as the finding that folate reduces neural tube defects did several decades ago. Other scientific highlights included numerous papers in leading biomedical journals, such as The Lancet, Nature Chemical Biology, Elife, the Proceedings of the National Academy of Sciences (USA), the Journal of Clinical Investigation and Nature Communications.

This year we bid farewell and thanked one of our brightest young investigators, Associate Professor Cath Suter – a pioneer in studies of epigenetic mechanisms causing disease. We also sincerely thank Sr Anthea Groves, who, after 14 years, has stepped down from our Board. A truly inspirational and beautiful person, Sr Anthea has been a stalwart. caring for the sick and indigent at St Vincent's Hospital for over five decades, and has been actively involved in helping the Victor Chang Institute, since its inception in 1994. We thank them both for their extraordinary efforts and wish them both all the very best for the future.



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We could not have made such progress in our research or momentous breakthroughs without the overwhelming support of our generous donors.

Almost every year since the Victor Chang Institute started, we have held a global symposium featuring major international as well as local speakers. In 2017, we joined forces for the first time with the Heart Research Institute to create the Sydney Cardiovascular Symposium. This year's symposium, Big Data and the Future of Cardiology, was enormously successful, covering such major technological advances as machine learning and Artificial Intelligence. Keynote speakers included our Princesses' Lecturer, Professor Calum MacRae from Harvard, as well as Professor Dan Roden, Vanderbilt University School of Medicine, and Professor Joseph Wu, Stanford Cardiovascular Institute. In the spirit of collaboration and to enhance interactions across the cardiovascular research community, we look forward to continuing and developing these international conferences every year.

Importantly, a major initiative in 2017 was the strengthening of our collaboration and interactions with our affiliated university, UNSW Sydney. We believe this will be a major win-win for both organisations and will help strengthen cardiovascular research at both institutions. I thank our Deputy Chairman, David Craig and also our Chief Operating Officer, Janina Jancu, as well as the Vice Chancellor and President of UNSW, Ian Jacobs, and the Deputy Vice-Chancellor (Research), Nick Fisk, for their efforts in developing this major new initiative.

Finally, I would like to take this opportunity to thank all our supporters, as well as our Board and Committees, the Trustees of the Mary Aikenhead Ministries, our administrative and scientific staff, and of course, the Sisters of Charity, who continue to inspire us and support our work.

Most importantly, I thank you, our donors – the lifeblood of our organisation. None of the ground-breaking discoveries described in this Annual Report could have happened without your generous support.

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Professor Robert M. Graham AO EXECUTIVE DIRECTOR



Australian women have a heart attack every day



10%

of patients survive if they suffer a cardiac arrest outside a hospital

Organisational Structure

Member

St Vincent's Health Australia CHAIR Paul Robertson

	/ictor Chang		
Scientific Advisory Board	CHAIRMAN Matthew Grounds	DEPUTY CHAIRMAN David Craig	Affiliations UNSW Sydney
Board Committees Finance and Risk CHAIR David Craig Media and Communications CHAIR Jill Margo AM Western Sydney CHAIR Louise Di Francesco	EXECUTIVE DIRECTOR Prof Robert Graham AO	DEPUTY DIRECTORS Prof Richard Harvey Prof Jamie Vandenberg	
Research DivisionsCardiac Physiology and TransplantationHEADProf Peter Macdonald AMDevelopmental and Stem Cell BiologyHEADProf Richard Harvey AMMolecular Cardiology and BiophysicsHEADProf Robert Graham AOMolecular, Structural and Computational BiologyHEADDr Joshua HOVascular BiologyHEADProf Roland Stocker	CHIEF OPERATING OFFICER Janina Jancu Administration and Core Facilities Essential Services Finance Governance and Policy Human Resources Information Technology	DIRECTOR OF FUND DEVELOPMENT Ariane Gallop Fund Development Bequests Corporate Partnerships Direct Marketing Media and Communications Philanthropy	
Innovation Centre CENTRE MANAGER Milad Melhem	DIRECTOR Prof Roland Stocker	DEPUTY DIRECTOR Prof Sally Dunwoodie	

Board of Directors

The successful operations of the Victor Chang Cardiac Research Institute are heavily reliant on the dedication, commitment and vision provided by our Board of Directors, led by Mr Matthew Grounds.



Matthew Grounds CHAIRMAN BCOM, LLB (HONS)

Mr Grounds is Chief Executive Officer and Country Head of UBS Australasia. Until May 2014 he also held the position of Head of Corporate Client Solutions, Asia Pacific and was a member of the UBS investment Bank Global Executive Committee. With more than 25 years investment banking experience, Mr Grounds is one of Australia's leading corporate advisers and has been responsible for a number of landmark transactions for major Australian and international companies. Mr Grounds is also a member of the UNSW Sydney Council, a member of the Business Council of Australia and Director of the UBS Foundation. Mr Grounds graduated from UNSW and holds a degree in Commerce (Finance Major) and Law.



David Craig DEPUTY CHAIRMAN BEC, FCA, GAICD

Mr Craig joined the Board in 2007 and is the Chair of the Victor Chang Institute's Finance & Risk Committee. He was the Chief Financial Officer of the Commonwealth Bank of Australia from 2006 to 2016 and has over 30 years of experience in financial management, strategy, mergers and acquisitions. His previous roles include: Chief Financial Officer for Australand, Global Chief Financial Officer of PwC Consulting, and for 15 years Senior Audit Partner of PricewaterhouseCoopers Australasia. Mr Craig is President of the Financial Executives Institute of Australia, a Director of the Lendlease Group, and has also served as a Director of the Australian Gas Light Company.



Robert M Graham EXECUTIVE DIRECTOR AO, FAA, MBBS (HONS), MD, FRACP,

FACP, FAHA, FAHMS, GAICD

Professor Graham is Executive Director of the Victor Chang Institute. He is the Des Renford Professor of Medicine, and Professor, School of Biotechnology and Biomolecular Science, UNSW, and Professor (adjunct) of Physiology and Biophysics, Case Western Reserve University School of Medicine, Cleveland, Ohio. He is a Fellow of the Australian Academy of Science and the Australian Academy of Health & Medical Sciences, and foreign member, Royal Danish Academy of Sciences and Letters. Professor Graham is also a member of the American Association for the Advancement of Science, the American Society of Clinical Investigation and the American Heart Association, and a Life Member, Heart Foundation of Australia.



Peter K Allen BAPPSC, AAPI

Mr Allen is an Executive Director and Chief Executive Officer of Scentre Group. Prior to this, Mr Allen was an Executive Director and Chief Financial Officer of Westfield Group. Mr Allen joined Westfield in 1996 and between 1998 and 2004 was Westfield's CEO of the United Kingdom / Europe and responsible for establishing Westfield's presence in the United Kingdom. Prior to joining Westfield, Mr Allen worked for Citibank in Melbourne. New York and London. Mr Allen is also the Chairman of the Shopping Centre Council of Australia.



Terry Campbell AM, MD, DPHIL, FRACP

Professor Campbell joined the Board in 2013. He is Director of Research at St Vincent's Health Network, Sydney, and Deputy Dean of Medicine, UNSW. From 2003 to 2009. he served as Deputy Director of the Victor Chang Institute alongside Professor Richard Harvey. He also served as President of the Cardiac Society of Australia and New Zealand from 2000 to 2002. Professor Campbell's research has encompassed both laboratory work and clinical cardiology. In 2003, he was appointed as a Member of the Order of Australia (AM).



Louise Di Francesco

Mrs Di Francesco joined the Board in 2010. Mrs Di Francesco has worked in the media industry for more than 30 years, initially as a journalist, and for the past 23 years in media and corporate communications. She is a specialist in all areas of corporate media management, public relations, issues management and crisis management, and has worked on campaigns for AAPT, CeBIT, Mercedes Benz Australian Fashion Week, Alterian, Carbon Planet, Australand, Lend Lease, Multiplex, Colliers, Landcom and James Fairfax.



Jennifer Doubell MSC, MA, BA DIP SOC STUDS, DIP CRIM, CFRE

Mrs Doubell has worked in the not-for-profit sector for more than 30 years. Mrs Doubell is currently the Executive Director of the Peter MacCallum Cancer Foundation. Previous roles include National Fundraising Director at the Heart Foundation, Director of Development and External Affairs at the University of Sydney and at the Australian Graduate School of Management, UNSW, and Group Manager at the Wesley Mission, Sydney. Across her various senior management positions, Mrs Doubell has helped raise in excess of \$484 million, and is the recipient of many industry awards for her work.



Hamish Douglass

Mr Douglass joined the Board in 2016. He is Co-Founder, Chief Executive Officer and Chief Investment Officer of Magellan Financial Group. Mr Douglass is the Lead Portfolio Manager of Magellan's Global Equity strategies and a member of Magellan's Investment Committee. He was formerly Co-Head of Global Banking for Deutsche Bank AG in Australia and New Zealand, a member of the Foreign Investment Review Board, the Financial Literacy Board, the Australian Government's Takeovers Panel, and the Forum of Young Global Leaders - World Economic Forum.



Leslie Field AM, FAA, DSC, PHD, BSC

Professor Field is the Senior Deputy Vice-Chancellor at UNSW. Prior to this appointment, he served as the Deputy Vice-Chancellor (Research) at UNSW from 2005 to 2016. He is the recipient of the Rennie Medal (1983); The Edgeworth David Medal (1986); The Organic Chemistry Medal (1992); the Centenary of Federation Medal (2003) and the RACI Leighton Medal (2010). He was elected as a Fellow of the Australian Academy of Science in 1996 and appointed as a Member of the Order of Australia in 2011. In 2013, he was appointed Secretary for Science Policy in the Australian Academy of Science and he is currently member of the Governing Council of the Australian Academy of Science. He was elected as a Fellow of the Royal Society of New South Wales in 2014.



Angelos Frangopoulos BA(COMM) MCAE, HonDA CSTURT, GAICD, JP

Mr Frangopoulos is the Chief Executive Officer and Managing Editor at Australian News Channel Pty Ltd (ANC), the operator of the SKY NEWS services and the leading provider of 24-hour television news services in Australia and New Zealand. Mr Frangopoulos is also the Chairman of the Australia Day Council of NSW, Chair of the Centre for Media History at Macquarie University, Pro-Chancellor (Sydney) for Charles Sturt University, Chair of the Walkley Advisory Board, a Director of the Australian Subscription Television and Radio Association (ASTRA) and is a graduate member of the Australian Institute of Company Directors. He's been awarded an Honorary Doctorate by Charles Sturt University.



Sr Anthea Groves RSC, OAM, RN LHA DIP. OF NURSING ADMINISTRATION

In July 2017, we said farewell to Sr Anthea after 14 years as a Director at the Victor Chang Institute. Sr Anthea is a member of the congregation of the Sisters of Charity and a Director of the Sisters of Charity Foundation. She served as Patient Liaison Officer at St Vincent's Hospital, Sydney, caring for the sick over several decades.



John Kean OAM, FCA, FAICS

Mr Kean has been a member of the Board since 2003, is a Life Member of the Victor Chang Institute and was the Chair of its Finance & Risk Committee until retiring from this position in 2012. He acts as an Independent Business Advisor and holds directorships in various businesses involved in finance, trade, primary production, property and healthcare.



Jill Margo AM, BA (HONS)

Ms Margo joined the Board in 2008 and is the Chair of the Victor Chang Institute's Media and Communications Committee. She is the health editor of The Australian Financial Review and is a best-selling author and biographer. She has won numerous international and national media awards, including two Walkleys and a Churchill Fellowship. In 2006, Ms Margo was awarded an Order of Australia for services to journalism and cancer. In 2016 Ms Margo was appointed an Adjunct Associate Professor at UNSW.



Annabel Spring BEC (HONS), LLB (HONS), MBA (HARVARD)

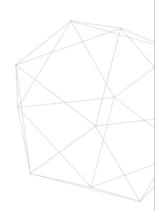
Ms Spring was Group Executive of the Wealth Management Division of the Commonwealth Bank of Australia (CBA). She was responsible for Colonial First State, Colonial First State Global Asset Management, Wealth Management Advice and CommInsure, and was a member of the Group Executive Committee. Prior to this, Ms Spring was Managing Director and Global Head of Firm Strategy and Execution at Morgan Stanley in New York. She is also Deputy Co-Chair of the Financial Services Council and a member of Chief Executive Women.

Ms Spring attended the University of Sydney and holds a Masters of Business Administration from Harvard Business School.



Dr Gary Weiss LLB (HONS), LLM, JSD

Dr Weiss joined the Board in 2009 and is a member of its Finance & Risk Committee. He holds the degrees of LL.B (Hons) and LL.M (with dist.), as well as a Doctor of Juridical Science (JSD) degree from Cornell University, New York. Dr Weiss is Chairman of Ridley Corporation Limited and Executive Director of Ariadne Australia Ltd. He is also a Director of Premier Investments Limited, Estia Health Limited, Thorney Opportunities Limited, Pro-Pac Packaging Limited, Tag Pacific Limited and The Straits Trading Company Limited in Singapore. Dr Weiss is also a Commissioner on the Australian Rugby League Commission and a Director on The Centre for Independent Studies.



Discoveries

11.1996

Baby brain

A powerful pregnancy discovery and the mastermind behind it "Today is the celebration of a double breakthrough. Not only have we identified a new cause of miscarriage and birth defects, we have also discovered a potential prevention."

Professor Sally Dunwoodie smiles as the press conference is broadcast around Australia and the rest of the world. It is the biggest moment in her impressive, exhausting career. Her breakthrough research has just been published in the *New England Journal of Medicine*. It's the world's most prestigious medical journal and her success is the scientific equivalent of winning an Oscar. Her acceptance speech is brief, humble.

"I never imagined this. In the past, whenever I was asked if my research would cure babies with birth defects, my answer was always, 'No it can't. Our focus is prevention'. And then I would say, 'Perhaps, pie in the sky, maybe one day, we might be able to override a mutation with something as simple as a dietary supplement'. It was a fantasy of mine. But now here we are. I think that day has come."

It took 12 years. Subconsciously spurred on by the memory of her father who passed away from heart failure when Sally was just a young girl. Consciously though, she was thinking of families other than her own.

Discoveries

"The more families I meet, the more important it becomes to find answers. A couple came to me once, eager to donate their DNA to my research. Their baby had a terrible heart defect and didn't have a hope of surviving. I'm proud of what we have achieved but it's these people who inspire me. They want to help others even though it's too late to help themselves."

4.9 million babies are born with a birth defect every year. This is why Sally works late into the night and on weekends. It's also why Sally has never been able to help out at her kids' school. She just cannot find the time.

In the lab, Sally holds a small jar up to the light. Inside is a tiny, engineered mouse embryo submerged in a clear solution. The embryo is mostly see-through but you can clearly make out its vertebrae, stained a bright aqua colour for easy analysis. To the trained eye, its kinked spinal column hasn't formed correctly. It has a genetic defect that has helped Sally make one of the greatest breakthroughs in pregnancy research in decades.

The greatest pregnancy breakthrough in decades?

It's a bold statement, but one that has been unapologetically defended by the Executive Director of the Victor Chang Institute, Professor Bob Graham.

"Can you point to a more significant discovery in pregnancy research this century?" he asks simply.

Currently when a baby is born with a defect, the cause is unknown 80% of the time. The doctors just shrug their shoulders.

"

Research is not fast, it's not easy nor cheap, and the job isn't done yet. There is still a mountain of work to do and with more funding, we'll get the answers sooner.

PROFESSOR SALLY DUNWOODIE



Make a difference

By making a philanthropic investment towards combatting birth defects and recurrent miscarriages you will enable our researchers to:

- Establish an observational study to quantify NAD levels in pregnant women
- Develop a standard diagnostic test to measure NAD levels in women
- Conduct clinical trials to test if vitamin B3 prevents birth defects and miscarriages in humans
- Determine a safe dosage of vitamin B3 that women could take, to potentially prevent birth defects and recurrent miscarriages.

"Imagine what that must be like for the parents!" Sally exclaims. "They'd have all these questions. They'd ask 'why, how and what did we do wrong?'. The mother always blames herself."

But this study is real progress. It found that a deficiency in a vital molecule, known as nicotinamide adenine dinucleotide (NAD), can prevent a baby's organs from developing correctly as it grows in the womb. It can lead to recurrent miscarriage as well as spinal, kidney, heart and other congenital malformations. In other words, Sally's research has identified a probable cause of these mysterious birth defects and recurrent miscarriage.

And it gets better...

Could a simple vitamin prevent birth defects?

Using a preclinical mouse model, Sally and her team also discovered that you could boost NAD back to desirable levels by simply supplementing a mother's diet with Vitamin B3 (niacin). This prevented birth defects in the offspring with 100 per cent success.

Back at the media launch, Sally tries to explain the significance of her discovery.

"What isn't known is how many women are deficient in NAD. The normal range of NAD in the human population is not known. We need more funding, more research and we need to do clinical trials. But there is enough evidence to conclude that Vitamin B3 could be the key and what was found in mice will be found in humans too."

The news spreads like vegemite.



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Driving our discoveries

Professor Dunwoodie is fortunate to receive generous support from Chain Reaction NSW, the Key Foundation, and the National Health and Medical Research Council. Her work would also not be possible without the ongoing collaboration with Professor David Winlaw, Paediatric Cardiac Surgeon at The Children's Hospital at Westmead. Their commitment has enabled this research to continue over several years, ultimately leading to this important breakthrough. But now there is even more work to do.



4hrs Every four hours

a baby is born with a heart defect in Australia

Discoveries

Preventing fatal heart attacks

Australian researchers are making a splash in heart attack prevention and diagnosis

t's three minutes to six on a bright Monday morning and Professor Roland Stocker is waiting outside a locked door. A familiar crowd of regulars stands beside him, clutching sports bags and towels while they chat about grandkids, football scores or the weather. The glass doors slide open and Roland heads for Lane 4, Fast. Underwater, away from the laboratory, this is where the celebrated professor gets his best ideas. The repetitive freestyle rhythm is meditative and, like the water, the ideas just flow.

"I think a lot about research when I swim. My thoughts are free to go anywhere. Much of the inspiration for my key experiments come to me in the pool."

Three kilometres later and Roland is on his way back home. He spends almost an hour answering a multitude of emails, then hops on his bike and cycles 25 minutes into work. He doesn't think about his research as he rides. He is too busy "trying not to get run over".

Today Roland is re-writing a scientific paper about an enzyme which could be a major culprit causing heart attacks. It's a promising piece of work but it needs finessing. A thought occurred to Roland during this morning's swim and it could be the difference between a rejection and publication.

The paper reports more than a decade of work condensed into 8,950 words. The enzyme is mentioned 213 times. For a non-scientist, the enzyme, myeloperoxidase, has a forgettable name, but it has an unforgettable property...





Discoveries

"It's what makes pus yellow," Professor Stocker explains. "It's present in our body's immune cells."

It's also present in the blood vessels that provide the heart with oxygen and nutrients. More importantly, Roland has just discovered that myeloperoxidase causes plaques to become unstable in our arteries. When an unstable plaque ruptures it clogs the blood vessels and can lead to a heart attack. Thanks to Roland's research, we now know that wherever there is myeloperoxidase activity there is also an unstable plaque ready to erupt and cause damage to the heart.

"This is potentially really important for clinical cardiology. Unstable plaques kill people. If we could translate our findings into humans it could have a potentially big impact in decreasing lives lost to myocardial infarction and stroke as well."



A non-invasive test

There's another major part to Roland's research. He is trying to develop a noninvasive test to determine who is at risk. In Roland's eyes, this is the "holy grail" of interventional cardiology.

Currently, doctors rely on angiograms to determine whether the heart's arteries are blocked or narrowed by plaques. But it only paints half the picture and you cannot see what is actually occurring inside the arterial wall. So your next option is an Optical Coherence Tomography (OCT) scan. This procedure can identify unstable plaques within the arterial wall but it is invasive, costly and risky.

"As I get older I think about this more. People of my age die of this. I'd personally like to do a non-invasive test to see whether I have unstable plaque in my heart and then I'd like to do something about it. Let's say I do have an unstable plaque... it could rupture at any moment clogging my arteries and to avoid this my only option would be an invasive procedure. I kept thinking 'there has to be another way'."

Driving our discoveries

Professor Roland Stocker's research has received support from the National Health and Medical Research Council and the Australian Research Council. It also relies on a generous contribution from The Angles Foundation. This funding is integral to the ongoing success of the research program at the Victor Chang Cardiac Research Institute. Equipping our leading scientists with the very best technology is critical to providing better patient care and could help prevent the deaths of thousands of men and women who continue to die from cardiovascular disease each year.



And there is; three words – magnetic resonance imaging, better known as an MRI. Roland has discovered a non-invasive way to detect unstable plaques in arteries with a simple MRI scan. It involves a chemical probe which highlights myeloperoxidase activity like a neon sign. It's a potential game changer.

So how does Roland propose to treat the problem? The good news is, we are close to having an effective medication. Due to the essential role the enzyme plays in our immune system, drug companies have been developing myeloperoxidase inhibitors for years. But until now, no one has plans to use it to tackle atherosclerosis in the heart.

Make a difference

By making a philanthropic investment in support of this program, you will enable our researchers to:

- Increase our pace of discovery dramatically in coronary artery care and accelerate our capacity to save countless more lives sooner
- Provide clinical practitioners with an effective tool capable of non-invasively detecting unstable plaques that could dramatically reduce the number of fatal heart attacks and change clinical practice
- Ensure Australia remains at the international forefront of preventive medical advancement against coronary artery disease and heart attacks

"We've narrowed it down to one specific drug which inhibits the enzyme and stabilises the dangerous plaque in a mouse model. Our results are exciting and we're ready for the next steps. At the moment we have been administering the drug right at the beginning, before the unstable plaque has developed. But I want to know what happens if we wait until the plaque is about to erupt? Will the drug still be as effective? Can we stabilise a vulnerable plaque? What effect does the drug have in the presence of other medication, like statins? We have a long list of questions and I need some inspiration!"

Perhaps tomorrow's swim will shed some light...



25% of heart attack victims display no prior symptoms

Yesterday's science, tomorrow's technology

How new technology is shaping new research for women with heart disease

Rewind to 1994. Bill Clinton is President, Disney's The Lion King is the highest grossing film, Janet Jackson is top of the pop charts, and the World Wide Web is just a toddler.

It was also the year that Dr Siiri Iismaa started working at the Victor Chang Cardiac Research Institute, on Tuesday the 14th of June to be exact.

"It was just myself and one other scientist. We hardly had any equipment, so we had to borrow a lot of it from another laboratory. We shared a Macintosh computer the size of an ATM machine! It's quite funny to think of the technology back then. If I wanted to get my hands on a scientific journal I had to make a trip to the library and I'd often have to wait months for the latest issue to arrive on a boat from America."

Almost 9,000 days later and the world is a very different place but one thing hasn't changed – Siiri still works at the Victor Chang Institute.

She scoffs at the idea of a career change. "I'm having too much fun making a difference," she casually replies.

From heart regeneration to biochemical analysis, Dr lismaa has lost track of the number of research projects she's worked on. Her latest research is focused on a disease called Spontaneous Coronary Artery Dissection, or SCAD for short.

Never heard of it? Until very recently SCAD was as rare as a floppy disk. It's predominantly misdiagnosed and occurs when there's a block in the blood flow to the heart. It causes a heart attack, abnormalities in heart rhythm or sudden death.

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"

The only hope SCAD patients have is medical research on a molecular scale. To make inroads into developing a treatment or prevention, we need to understand how and why someone develops SCAD and that requires research at the cellular, molecular and genetic levels, with the latest technology."

. DR SIIRI IISMAA

Women at risk

"I was struck by the fact that 95% of the cases are women and they're not your traditional high risk patients. They're not overweight, they're not diabetic and they're fit. And then all of a sudden they present to the hospital or GP with a heart attack because their coronary arteries have split. A lot of the time they just get sent home without treatment!"

Mum of four, Pamela McKenzie, suffered a SCAD as she was taking out the laundry.

"I felt a twinge in my chest, almost like a click. Then I felt a sudden intense, extreme pain just to the left of the centre of my chest. This pain radiated down both arms and then I felt a wave of nausea wash over me. When I got to the hospital, the nurses told me there was nothing wrong and that I'd be going home shortly. Thankfully they did some tests to double check," Pamela reveals.

A revolving door of specialists and doctors told her "it's extremely rare", "one in a million", "I've never seen this before", "you're lucky to be alive".

Feeling isolated and anxious Pamela sought hope and comfort in the 2.2 billion monthly Facebook users around the globe. Bingo. It was as effective as a recruitment drive on a jobs site. And so began the first patient study in Australia (if not the world) where the patients were recruited on social media.

"It's completely unheard of," explains Siiri. "I've been really amazed by that Facebook page. To think that you can now recruit an entire patient database on a social platform is fascinating. Our whole study has grown out of that and everyone is so willing to participate."

Now Siiri's desk is piled high with DNA swabs from SCAD survivors.

"Each recruit is given a small take-home kit containing a mouth swab. We can isolate the DNA from the cheek cells on the swab. That gives us enough DNA to search the patient's entire genetic make-up through whole genome sequencing. We're hoping to identify a genetic mutation that may be causing this disease and it requires enormous processing power to analyse the billions of pieces of code and data."

Siiri's pixilated Macintosh computer from 1994 has long gone. Instead she relies on a fancy gene machine called the HiSeq X System. It's state of the art, top of the line, best in the world. For now....

Driving our discoveries

This Australian first SCAD research at the Victor Chang Institute would not be possible without support from the Cardiac Society of Australia and New Zealand, the St Vincent's Clinic Foundation and the Catholic Archdiocese. Your support will impact the progress of our research in an area of significant concern for women and our community. To advance this research, we not only need funds to do the genetic testing but, as importantly, funds to undertake studies at the cellular level.





Discoveries

V SENDAI

Fishing for clues

A small, stripy fish may hold the key to heart and spinal cord regeneration in humans

Growing up in Sendai in northern Japan, Dr Kazu Kikuchi spent all his free time playing in the forest near his home.

- "My friends and I used to enjoy fishing and catching crayfish and bright coloured beetles in the forest every afternoon. I was doing very poorly at school. I'd get 10%-40% on exams and I'd throw away the papers on the way home so mum wouldn't find out. I hated maths!"
- At 14, Kazu was the black sheep in a family of high achievers. His father is a surgeon, his mum is an ophthalmologist, even his siblings are doctors.
- "It made my mum really upset to see me flunking. She'd say to me 'I'm not going to be around forever, you need to be able to support yourself'".

In Japan, students must sit an entrance exam to determine which high school they attend. The brightest children are separated from the not-so-bright and Kazu was destined for the worst school in Sendai.

"I was tiny for my age. The kids at that school were enormous! It would have been dangerous, I would have been constantly bullied and I was determined not to go there! It was almost impossible to catch up. I didn't even understand what the teachers were talking about in class. But I worked extremely hard."



Discoveries

A change of heart

Kazu finished senior school at the top of his class. He graduated from Tohoku University School of Medicine like the rest of his family, but he was rattled by an eerie sense that the next 50 years of his life had already been decided for him. So Dr Kikuchi packed his bags and boarded a plane to North Carolina, pursuing a new adventure as a scientist at Duke University.

For the next five years Kazu was captivated by a surprisingly clever freshwater fish, that can repair its heart, spinal column, kidneys and fins – much like a lizard can grow back its tail.

"Zebrafish, believe it or not, are very similar to humans. Our organs develop in similar ways and almost 70% of our genetic makeup is the same too. If we can understand how zebrafish repair their cardiac muscle, we may get some insight into how we can stimulate healing in the human heart."

By 2011 Kazu had emerged as a world leader in zebrafish regeneration. He boarded another plane, this time for Sydney, Australia and the Victor Chang Institute.

The first thing you notice when you enter the zebrafish aquarium at the Victor Chang Institute are the blue tanks. There are thousands of them bubbling away, stacked on racks from floor to ceiling. While several scientists utilise the facility, Kazu dominates the space. He's in charge of approximately 35,000 zebrafish and there are more being delivered from Queensland today. (They fly Virgin Airlines, in a temperature and pressure-controlled cabin). Every afternoon Kazu can be found in the aquarium discussing progress with his team of researchers.

"He always checks to make sure everything is in place," says the aquarium's manager, Cecilia Jenkins. "It's amazing how he keeps track of things with so many zebrafish to remember, but he is incredibly thorough and notices even the smallest change. He never misses a trick."

Dr Kikuchi's research is painfully time consuming and meticulous. But according to his colleagues, when he makes a discovery it has far greater resonance.



Driving our discoveries



At the end of 2016, Dr Kazu Kikuchi was awarded a three-year Project Grant from the National Health and Medical Research Council. He has also been honoured with a JDRF Innovation Award for his promising investigations into zebrafish immune cells and type 1 diabetes. This funding is integral to the ongoing success of the research program at the Victor Chang Institute.

Making an impact

His latest scientific paper is the cover story in the highly prestigious journal, 'Developmental Cell'. The front page features a striking photo, taken by Kazu, of a zebrafish under a microscope. It looks like an X-ray, covered in tiny fluorescent red dots.

There's a lot of excitement about these bright dots. They're a special population of immune cells, known as regulatory T cells, which are critical for repairing damaged tissue. It was previously believed that they did not exist in zebrafish. Kazu proved the world wrong.

"One afternoon I received a phone call from one of my technicians who told me to come downstairs quickly. I ran all the way to the aquarium and looked into the microscope and there they were, unmistakably! Hundreds of T cells, sprinkled across the surface of the skin. It was incredibly exciting, we'd never seen anything like it."

Kazu also unearthed that when a zebrafish is injured, these unique cells migrate to the damaged site and completely regenerate the tissue without any scarring.

"We were fascinated to discovered how adaptable these immune cells are. They have the remarkable ability to change their function and produce regenerative factors specific to the injured tissue. So if the heart needs repairing, they'll adapt to the heart, or if the spinal cord needs healing they'll change to suit the spine, and so forth." "Imagine if we could do that in humans!" Kazu exclaims. "If we can manipulate human T cells to cure heart disease, reverse spinal cord damage and repair vision loss the implications are likely to be huge. We just need to keep working at it, no matter how long it takes."

Even today you can still see glimpses of Kazu as a 14-year-old student. His determination to succeed hasn't dwindled in all these years.

Make a difference

A gift in support of Dr Kikuchi's research will:

- Enable significant medical findings in regenerative medicine with far-reaching community impact
- Aid in the development of molecules that stimulate the growth of new cells in a damaged human heart, spinal cord and retina, helping them function again after serious trauma.
- Potentially reverse our understanding that a human heart, spinal cord and retina lack the capacity to regenerate muscle cells



Kiran's Story

"My biggest fear is dropping dead on the train on my way to work, alone and not with my family. My grandfather died of a heart attack at Tokyo airport on his first overseas trip. My father died of a heart attack at 57. I've just turned 57 and I'm more anxious than ever. I've realised that my dad wasn't that old and there's a lot he missed out on.

Due to my family history of heart disease, I always had an annual stress test, but about six years ago I received some abnormal results and my cardiologist wanted to do further testing. Waiting for the angiogram appointment was really difficult. Every pain, every twitch, every feeling... you freak out!

They found I had a 95% blockage in one of my arteries. I was relieved they found it in time and I had a stent put in. I take care of myself, but my heart disease is mostly genetic, so a lot of it is out of my control. I'm not ready to go. I want to meet my grandkids and watch them grow up. I want to make sure everyone's happy especially my wife and daughter. I'll do everything I can to make sure this happens. But I also know heart disease doesn't let you say goodbye".





26min

Every 26 minutes an Australian dies of heart disease

"

I continue to get tested every year, but I keep thinking, what if I don't make it to the next appointment.

Research Update

Professor Roland Stocker and his team at the Victor Chang Institute are investigating how heart attacks can be detected and treated before they occur. Professor Stocker's laboratory is currently developing a non-invasive technique to better identify the type of blockages in arteries that predispose patients to heart attacks.

Miranda's Story

"I was 21 when I was diagnosed with cardiomyopathy. I knew what it was because my father had passed away from it when I was just 16 months old. It wasn't until I wanted to have a baby that I realised how much my life was affected. I was told a pregnancy would likely kill me but all I wanted was a baby. Thankfully my sisterin-law offered to carry my baby and we began our surrogacy journey together.

In June 2014, I found out I was going to become a mum! It was the best news ever. I held a baby shower for my unborn baby before Christmas, and the next day I was told I needed a heart transplant. My initial reaction was 'NO!' How could I go through this when I was just getting ready to become a mum? I didn't have time for a heart transplant.

My miracle baby boy was born in February. I put off the transplant as long as possible, but eventually the doctors told me I had to or I wouldn't survive. I'm now two years post-transplant and my life couldn't be more different. I can live life to the fullest again. Best of all, I can now run and play with my little boy.

I feel very lucky. I owe my life and this second chance to my team of doctors and nurses, but most of all to the family who said yes to organ donation".





Around 100 heart transplants are performed every year in Australia



It's bittersweet to be given such a gift when you know somewhere in a hospital, a family is saying their final goodbyes.

Research Update

At the Victor Chang Institute, Professor Peter Macdonald and his team are leading a new era in heart transplantation, responsible for the most significant advance in this field in three decades. They've developed a unique preservation solution that can extend the time a donor heart can spend in transit from 4 to as many as 14 hours. Their work has increased the number of organs available for transplantation by as much as 30%.

Research Divisions



Developmental and Stem Cell Biology

Harvey Laboratory

- Heart development
- Congenital heart disease
- Heart stem cells & regeneration

Dunwoodie Laboratory

- Congenital heart disease
- Embryonic development
- Birth defects

Kikuchi Laboratory

- Heart muscle regeneration
- Heart failure

Winlaw Laboratory

- Congenital heart disease
- Genetic analysis

Cardiac Physiology and Transplantation

Macdonald Laboratory

- Heart transplantation
- Donor heart preservation
- New heart failure treatments

Hayward Laboratory

- Heart failure
- Left ventricular mechanical support devices

Feneley Laboratory

- Cardiomyopathy
- Heart attack
- Ischemic heart disease

Keogh Laboratory

- Pulmonary hypertension
- Heart failure
- Immunosuppression

Muller Laboratory

- Structural heart disease
- Valvular heart problems

Jabbour Laboratory

- Heart transplant rejection
- Magnetic Resonance Imaging

Dhital Laboratory

Heart transplantation



Molecular Cardiology and Biophysics

Graham Laboratory

- Cardiac regeneration
- Heart failure
- Hypertension

Vandenberg Laboratory

- Arrhythmias
- Electrical activity in the heart

Hill Laboratory

- Drug-induced arrhythmias
- Computational cardiology

Fatkin Laboratory

- Dilated cardiomyopathy
- Atrial fibrillation
- · Inherited heart disease

Martinac Laboratory

- · Ion channels in the heart
- Mechanical forces

Hool Laboratory

- Cardiomyopathy
- Heart failure associated with muscular dystrophy

Smith Laboratory

- Hypertension
- Pharmacology

4

Molecular, Structural and Computational Biology

Suter Laboratory

- Epigenetics
- Parental Obesity

Ho Laboratory

- Bioinformatics
- Mass analysis of human genomic data

Giannoulatou Laboratory

- Bioinformatics
- Cardio genomics
- DNA analysis

Stewart Laboratory

- Protein structure
- Cryo-electron microscopy

Christie Laboratory

- Protein biochemistry
- Protein function

Clinical Faculty

A/Prof Cameron Holloway A/Prof Jane McCrohon Dr James Otton A/Prof Jacob Sevastos Dr Phillip Spratt A/Prof Rajesh Subbiah

Honorary Faculty

Prof Oliver Freidrich Prof Matthias Hentze Prof Ahsan Husain Dr Lawrence Lee Dr Ming Li Prof David Martin Prof Andras Nagy Prof Soren-Peter Olsen Dr W. Andrew Owens Prof Thomas Preiss

Vascular

Biology

Stocker Laboratory

- Atherosclerosis
- Heart attack
- Stroke

6 Vict

Victor Chang Innovation Centre

Professor Roland Stocker Director

Professor Sally Dunwoodie Deputy Director

Milad Melhem Manager

A/Professor Mark Hodson Metabolomics Laboratory

Dr Ashish Mehta iPSC and Phenotyping Research Laboratory



The Victor Chang Innovation Centre

Work on the Victor Chang Innovation Centre, established with a \$25 million investment from NSW Health, is progressing well. The Centre's purpose is to improve the ability of cardiovascular researchers in NSW to undertake cutting-edge research using stateof-the-art equipment and to facilitate better collaboration amongst cardiovascular researchers across the state.

After extensive consultation with researchers and industry experts we have purchased most of the equipment that will form part of the Victor Chang Innovation Centre, including the world's first pre-clinical 9.4T PET MRI which will allow researchers to measure the functionality of tissue and organs using two different processes to generate a single scan.

Building works to accommodate the equipment in purpose built facilities is ongoing with the Metabolomics Facility being the first to be completed.

The Centre has forged closer working relationships with UNSW Sydney and St Vincent's Hospital, who will each house some of the equipment forming part of the Innovation Centre. These collaborations will allow us to utilise the expertise of equipment operators located at these facilities, to increase researcher access to the equipment and improve research outcomes.







Cyclists from the Chain Reaction Foundation Guests at The Bay Soiree



Fundraising **Events**

Beachside at the Bay Soiree

MARCH 2017

The much-anticipated Hawaiian themed Bay Soiree, hosted in partnership with Watsons Bay Boutique Hotel transported guests to the shores of Waikiki. Guests enjoyed a bespoke menu as the sun set, raising over \$60,000 to help support a young scientist's dream to find cures for heart disease. The night was a huge success thanks to our MC Todd McKenney, the Young Appeals Committee, Marcus Chang, Fraser Short, the team at the Watsons Bay Boutique Hotel and all sponsors.

Pedal power helps mend broken hearts

MARCH/APRIL 2017

Over 30 senior

business executives

than 1,000 gruelling

from NSW cycled more

kilometres through New

Zealand's North Island to

raise money for children

with congenital heart

disease. The Chain

Reaction Challenge

\$190,000 for babies

born with heart defects.

The support of the riders,

John Ward, and his team

have helped scientists

Institute make a world first double pregnancy breakthrough.

at the Victor Chang

Foundation raised

Charity steer moo-ves heart research along

APRIL 2017

For the nineteenth consecutive year, livestock heavyweights Schute Bell Badgery Lumby auctioned off 500kg 'Marco', the steer at the Sydney Royal Easter Show to raise vital funds for lifesaving heart research. Cared, fed and raised by students at Murrumburrah High School, Marco was sold to the very generous Paul Ferry, who has purchased the charity steer at the Easter Show for the ninth year in a row.

Cocktails at the Crown

MAY 2017

The Victor Chang Institute hosted a marquee event at the Crown Mansions in Perth to showcase our recent achievements and celebrate the extraordinary efforts of our supporters. Awarded a prestigious Ambassador Award, we wish to congratulate and thank Patti Chong for her exceptional dedication to championing the Victor Chang Institute and its vital work.



y. Fiona Coote at the Sydney Royal Easter Show Steer Auction
 z. Guests at the Women Against Heart Disease Luncheon



Fun in the pool at the Des Renford Charity Gala day Guests at the La Dolce Vita lunch Glen Carling Memorial Golf Day



Women unite against heart disease

Family fun day helps find a cure for heart disease

Ladies who lunch raise vital funds

JULY 2017

OCTOBER 2017

Established to honour the memory of Monica O'Loughlin, the Victor Chang Institute's Women Against Heart Disease Lunch supports the fight for women's heart health. In partnership with Commonwealth Bank's Women in Focus, the event raised \$68,000 for our scientists. Guests heard from heart transplant survivor Miranda Hill, Dr Penny Adams, Professor Diane Fatkin and MC Jaynie Seal.

The annual Des Renford Charity Gala day was a huge success! The Des Renford Leisure Centre has hosted a fun filled day for the whole family to enjoy for the past 17 years, raising a total of \$500,000 for the Victor Chang Institute. This year, 3,000 people came along to enjoy a day out supported by Randwick City Council, Michael and Vanessa Renford and the team of wonderful volunteers.

NOVEMBER 2017

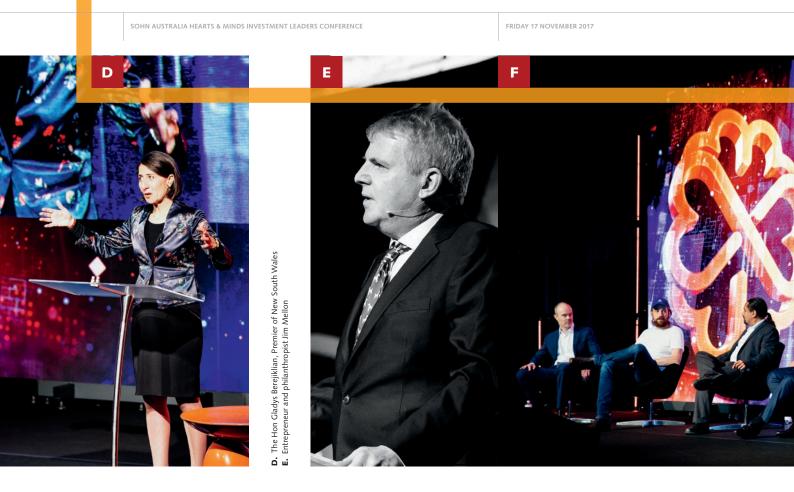
Hosted in partnership with Joh Bailey, the first La Dolce Vita lunch at Bar Machiavelli was held in spectacular style, with 200 glamourous guests coming together to raise funds for heart disease in women. A big thank you to Joh Bailey, Marilyn Koch, Hoda Waterhouse, Kate Sorrenti, Carla Farah, Paola Toppi, Jesse Davidson and our MC Kerri-Anne Kennerley whose combined efforts helped raise over \$98,000 for Victor Chang Institute scientists.

Keeping a legacy alive one putt at a time

NOVEMBER 2017

Dedicated to the memory of Glen Carling and his passion for golf, the fourth annual Glen Carling Memorial Golf Day was a huge success! Creating an ongoing legacy on the green for the much-loved husband, father and friend, the day has raised a cumulative total of over \$100,000 for researchers at the Victor Chang Institute. The golf day was established by Norm Atkinson, Gemma Carling, and the extended Carling family.

Sohn Australia Hearts & Minds Investment Leaders Conference The second Sohn Australia Hearts & Minds Investment Leaders Conference was held at the Sydney Opera House in November. Once again, the sharpest investment minds from around the world gathered with the brightest of the local funds management community and shared their single greatest investment concept to a sell-out audience, raising crucial funds to support medical research.



The exceptional line-up of speakers included British billionaire entrepreneur and philanthropist, Jim Mellon – renowned for forecasting emerging global trends starting with the GFC in 2008, Futurist and Angel Investor, Ramez Naam; Joe Lonsdale, Co-Founder of 8VC; and Rob Luciano of VGI Partners.

We were delighted to welcome Prime Ministers past and present with The Hon Malcolm Turnbull, MP and The Hon Paul Keating both appearing as special guest speakers. We were pleased to have the support of the NSW Premier, The Hon Gladys Berejiklian, MP who opened the conference.

Local investment gurus included Mark Nelson, Caledonia, Mike Cannon-Brookes Co-Founder and Co-Chief Executive Officer, Atlassian; Victor Chang Board Member and Co-Founder of Magellan Financial Group, Hamish Douglass, with his 2016 stock pick Apple (up 54%) and Peter Cooper, Chief Investment Officer of Cooper Investments with his 2016 stock pick, Brinks (up 85%).

The conference raised more than \$3 million for Australian medical research that was shared amongst the Victor Chang Cardiac Research Institute, Black Dog Institute, MS Research Australia and Juvenile Diabetes Research Foundation.

Fundamental to the financial success of the conference is the generous support that we receive from our partners including the Commonwealth Bank and The Paul Ramsay Foundation that is investing \$10 million in investment picks from the 2017 conference.

The idea for the conference was first raised by Board member, Dr Gary Weiss at a Victor Chang Board Meeting in 2015, and this initiative has now raised over \$7 million for medical research and has become the leading investment conference in Australia.

SYDNEY OPERA HOUSE

SYDNEY, AUSTRALIA



H. The Hon Malcolm Turnbull, Prime Minister of Australia



Achievements and Awards

Scientific Accolades

Professor Richard Harvey *AM (Order of Australia)* Australia Day Honours

Joseph Meyerhoff Visiting Professorship Weizmann Institute of Science, Israel

Professor Peter Macdonald *AM (Order of Australia)* Queen's Birthday Honours

Professor Sally Dunwoodie 3 Winner NSW Premier's Prize for Excellence in Medical Biological Sciences

Professor Diane Fatkin Fellow The American Heart Association



6













Professor Livia Hool *Research Affiliate and Honorary Senior Research Fellow* Perron Institute Perth, 2017-20

Dr Louis Wang Fellow Cardiac Society of Australia and New Zealand (FCSANZ)

Young Tall Poppy Science Award Australian Institute of Policy and Science

Dr Inken Martin Joint Winner Ralph Reader Basic Science Young Investigator Award

Finalist NSW Government Ministerial Award for Rising Stars in Cardiovascular Research

Dr Hananeh Fonoudi Postgraduate Award for Research Excellence Australian Society of Medical Research

Dr Hong Chee Chew *Finalist* President's Prize, Transplantation Society of Australia & New Zealand





Victor Chang Institute Awards

Dr Chris Stanley *Post Doctorate* Paul Korner Seminar Series Award

Celine Santiago *PhD Student* Paul Korner Student Award

10

11

12

Dr Julie Moreau *Post Doctorate* Paul Korner People's Choice Award

Dominic North *Precinct Stores and Dock Manager* Executive Director's Award

IMB Community Foundation Supporter Victor Chang Ambassador Award













Victor Chang Community Awards

Victor Chang Award for Excellence	14
in Cardiovascular Journalism Jordan Baker and Sam Ruttyn, The Sunday Telegraph	
Victor Chang Heart of Gold Awards	15
26 Australians honoured for helping save the life of someone having a heart attack or cardiac arrest	
Victor Chang School Science Awards	16
Over 200 year 11 students across NSW	
commended for excellence in science	

Statement of Income and Expenditure

VICTOR CHANG CARDIAC RESEARCH INSTITUTE

For the year ended 31 December	2017 \$	2016 \$
Income		
Grants	12,774,886	12,624,817
Donations and fundraising	2,849,366 ¹	7,367,783
Investment and other income	2,090,217	2,199,484
Total income	17,714,469	22,192,084
Expenses Research expenses	14,680,685	15,129,827
Administration expenses	5,886,458	5,783,628
Fundraising expenses	1,411,149	1,310,438
Total expenses	21,978,292	22,223,893
(Deficit) before non operating income	(4,263,823)	(31,809
Non operating income		
Unrealised gain on investment revaluation to market	987,705	208,422
Net (deficit)/surplus for the year	(3,276,118)	176,613

1. Donations and fundraising activities include an incremental investment of approximately \$3 million made in 2017 in developing and implementing strategically focused fundraising activities of Regular Giving and Direct Marketing Appeals.

Comparative figures have been adjusted to conform with changes in presentation for the current year.

The above is an extract from the 2017 audited Financial Statements. The extract does not include the information normally included in the financial statement. Accordingly, this extract is to be read in conjunction with the audited Financial Statements for the year ended 31 December 2017.





Victor Chang Health Check Booth

Keeping the hearts of Australia alive

The Victor Chang Health Check Booth travels right across Australia, reaching communities in many corners of the country and 2017 was another successful year for the Health Check Booth.

Staffed with ten qualified nurses, the Health Check Booth tests people for key heart disease risk factors including blood pressure, blood sugar levels and blood cholesterol levels.

The Health Check Booth is generously supported by HCF and IMB Community Foundation.

For all enquiries or to book the Victor Chang Health Check Booth, please contact Jayne Baric on **(02) 9295 8760** or **j.baric@victorchang.edu.au**

2017 Results

58,000+

Australians tested since 2011

10,002

- -----

new participants tested



5 states

36% had high cholesterol

86%

did not know their blood sugar level

36% were encouraged to visit their GP

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43

Supporters and Acknowledgments

Our life-saving research would not be possible without the generous commitment of our valued supporters.

These categories represent cumulative philanthropic support received over the past 10 years.

Chairman's Council (\$1 million+)

ANZ Banking Group Ltd Balmoral Pastoral Pty Ltd Chain Reaction Challenge Foundation Citigroup Commonwealth Bank Consolidated Press Holdings Ltd Crown Resorts Foundation Estate of the late Ian Norman State Government of New South Wales The Lady Fairfax Charitable Trust The Lowy Foundation Robert Ingham AO

Director's Lab (\$500,000 - \$999,999)

Estate of the late IIze M Baltins Estate of the late Bob Henry De Groot Barbara M Ell OAM Estate of the late Tatiana Suslov Angela Riccio David and Diana Ritchie Estate of the late Nancy M Roberts Estate of the late Thelma R Tagg The Freedman Foundation Westfield Holdings Limited

Discoverers (\$100,000 - \$499,999)

Leonard Ainsworth AMP Foundation Charitable Trust Estate of the late William Bell **Bing Lee Electronics** Caledonia (Private) Investments Pty Limited Challenger Group Services Sam Chisholm Club Marconi Gerry and Wendy Commerford Commonwealth Bank Cooper Investors Pty Ltd David Craig Ernst & Young Paul Ferry Goldman Sachs Australia Services High Pass Holdings Pty Ltd Jessica Hore Mark Johnson John Kean OAM Ralph Keyes Estate of the late Paul and Jennifer Korner Estate of the late Marjorie Grace Lawn Le Montage LFG **Tony Littlemore** Macquarie Group Foundation Estate of the late Moira Marlin Mineral Resources Limited Neilson Foundation Estate of the late Rose O'Keefe Paradice Family Foundation Estate of the late May Lillian Perkin Priceline Ptv Limited Regal Funds Management Road Runner Mobile Tyres Tim Roberts Estate of the late Valerie Ronayne Estate of the late Thaddeus Schbilski Seven Group Holdings Simon Lee Foundation Estate of the late Allan Ernest Nicolas Tackaberry Estate of the late June Lillian Teb-Pitt The Profield Foundation The RA Gale Foundation Jennie Thomas AM **UBS** Foundation Estate of the late Annette Geraldine Van Dop VGI Partners Pty Ltd Ervin and Charlotte Vidor AM Waislitz Family Foundation Estate of the late Douglas Arthur Westerland Wilson Asset Management Mimi Wong

Partners (\$25,000 - \$99,999)

Estate of the late Elizabeth Adamson Lenore Adamson Alceon Group Pty Ltd Appliances Online Ardea Investment Management Ariadne Australia Limited Auscap Asset Management Australian News Channel AW Edwards Pty Ltd Balnaves Foundation Pty Limited Patricia Barringer Guido Belgiorno-Nettis AM BlackRock **Capital Investment Partners** Carla Zampatti Foundation William Chalk Evelyn Chan Vanessa Chang Marcus Chang Ann L Chang Angela Cho ClearView Wealth Ltd Denis Cleary AM CM & JA Whitehouse Foundation Estate of the late Peter Charles Coghlan Commercial Projects Pty Limited Matthew Comyn Estate of the late Ausilio Confalonieri Estate of the late Mary Elizabeth Corlis **RJ** Crawford Cue & Co Pty Ltd Estate of the late George Davis Deutsche Bank AG Louise Di Francesco Estate of the late Peter Dixon Dymon Asia Capital; (Singapore) Pte Ltd **Richard Elmslie** Elsie Cameron Foundation Bruce Fink Christopher Flynn Angelos Frangopoulos Scott Gibbons Goodyer Real Estate Greencape Partners Greencliff Realty Pty Ltd Matthew Grounds Estate of the late Grace Hall Kim Harding Ena May Harries Hawkesbury Race Club HCF Kristiane Herrmann IMB Limited

. . .

John Ingram Kerry James AM Kerry Ingredients Australia Pty Ltd Marcus Laithwaite Landerer & Co Lanyon Asset Management Audrey Lois Lee John Leece AM Lewin Foundation Lin Huddleston Charitable Foundation Steven Lowy AM Mr and Mrs Tom Lyons Macquarie Group Services Australia Pty Ltd Magellan Asset Management Limited Angelo and Maria Maggiotto Manikay Partners Manildra Group Susan Maple-Brown AM Geoffrey Marshall Master Management Pty Limited McDonald Jones Homes Foundation Pty Limited MCK Family Pty Ltd Mersquad Investments Pty Limited Morgan Stanley Wealth Management Wayne Morris Estate of the late Alfred Ewart Morris Patricia New Oakville Produce Group Sylvia O'Cass **Origin Energy** P & M Quality Smallgoods Pty Ltd Paceline Inc Roslvn Packer AO Estate of the late Carma Passaris Pengana Capital Group Perpetual Limited Estate of the late Peter Powell PwC Australia R T Hall Trust Ralph Johns Pty Ltd Randwick City Council Mark Reardon Michael Renford Res Publica Pty Limited Denis Richmond Jessie Ritchie Estate of the late Roland Roberts Rotary Club of Dubbo South Inc Secure Parking Estate of the late Shirley Margaret Corder David Shmith Philip Small Speed & Stracey Lawyers Marie Spies Alice Styles Tarkett Australia Pty Ltd

Valerie Taylor **Tony Tesoriero** The Hospitals Contribution Fund of Australia Limited The Mostyn Family Foundation The Sky Foundation The Wales Family Foundation Ptv Limited Estate of the late Theodora Zaxarias Panaretos Alden Toevs Toga Pty Limited Trazov Pty Ltd UBS Australasia Estate of the late Una Margaret Biddle Unilever Australia Limited WCL Management Pty Ltd Wesfarmers Limited Weswal Gallery Cafe Robert Whyte Simon and Mikhal Wilkenfeld Albert Wong Lynn Yager Estate of the late Walter Ziemba

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