Heart Research Australia

Keeping Families Together For Longer

Annual Report
2020

Heart Research Australia

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Contents

Turning heartache into a legacy

Heart Research Australia exists to ultimately keep families together for longer.

We strive to support our researchers to find breakthroughs that will change the current status quo of heart disease. The more we understand about this insidious disease and its prevention, diagnosis, and treatment, the more lives we can hope to save.

Ischaemic heart disease is the leading cause of death for Australians and although there have been improvements in the understanding and treatment of the disease there is still a long way to go with too many families having to say goodbye to loved ones before they should.

In April 2019, the Williams family was one of the many families each year that had to say goodbye to an integral member of their family, Darren Williams, way too soon. Described as a devoted father, loving husband to his high school sweetheart Kim, and backbone of the Kiama Power Australian Football Club, Darren Williams still remains an incredibly loved member of the local community. On his shock passing, hundreds of people lined the streets to farewell the club legend who had such a positive impact on so many lives.

Darren was devoted to his club, game, and community but most of all, he was devoted to his family. It was whilst cheering his boys on from the sidelines as they played AFL for Kiama Power against Figtree that he had his devastating heart attack at just 55 years of age.

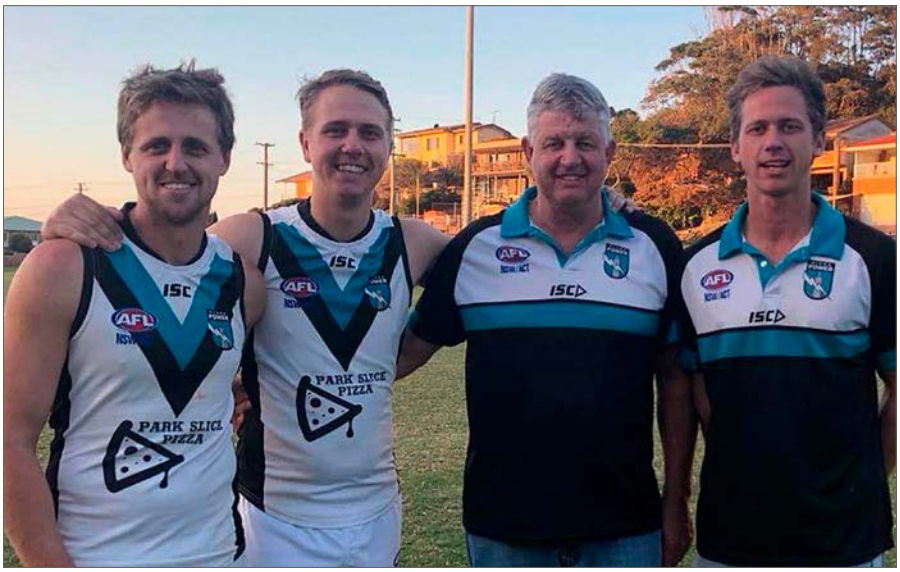
According to AFL South Coast "Darren was the volunteer every club would love to have, and typically even on the day he tragically left us, Darren was working in the club, making coffees in the canteen, helping at the BBQ, running the board for the Seniors in which his three boys were playing... such was his way."

Together with Heart Research Australia, the Williams family have set up the Darren Williams Research Fund in the hopes to save families and communities the devastating loss they have experienced.

In honour of his father, his son Michael has rallied the Kiama Power team and organises an annual fundraising game to help raise awareness about heart disease and much needed funds into heart research. Every year when Kiama Power play Figtree (the match where Darren Williams had his fatal heart attack) they run a fundraiser for the Heart Research Australia Darren Williams Research Fund. Check out the community fundraising

section on page 20 to read more about this.

We are so grateful for the continued support from the Williams family, Kiama Power AFL team, AFL South Coast and the South Coast community towards the Darren Williams Research Fund and helping us change the future of heart disease and reduce the devastating impact heart disease has on families and the community.



***"Vale Darren Williams** - AFL South Coast has lost one of its absolute finest – a truly great football gentleman."*

Message From Our Chairman

With all the devastation that has arisen this financial year, I find it incredibly heartening to see the generosity our community has continued to show Heart Research Australia. Whilst our environment has significantly shifted this past year, some things haven't changed. Heart disease is still the leading cause of death globally and our researchers and team still keep fighting the fight against heart disease. We are so grateful for all your continued support throughout this year to enable us to continue this fight.

Despite not being allowed in their labs for a portion of the start of 2020 due to COVID-19, our researchers have been making great developments this year and it is thanks to our many supporters that this has been able to happen. Our researchers are on the precipice of discovering breakthroughs, so this continued on-going support enables these projects to continue on, changing the face of heart disease for future generations. Some of these world-first breakthroughs were featured on Channel 7 and Channel 10 news as well as on Channel 7's House of Wellness. Visit page 12 to read more about these.

It was with great sadness that we farewelled one of Heart Research Australia's founders, Professor Stephen Hunyor earlier this year. Professor Hunyor and his colleagues had great vision in understanding the importance of supporting seed funding for heart research. Heart Research Australia has continued this vision and legacy of Professor Hunyor by supporting early stage research for our world-class and emerging researchers. Supporting this early stage research enables our researchers to achieve solid results enabling them to be eligible for larger more competitive grants.

The work our researchers are doing is so inspiring, from Dr Carmine Gentile and Dr Chris Roche's work using a patient's own stem cells to create a personalised patch to regenerate damaged parts of the heart muscle following a heart attack, to the work of Dr Usaid Allahwala in investigating why some people are able to grow new arteries and how they do that.

I hope you enjoy reading the updates from our researchers and seeing the potential this work could have on the future of heart disease for generations to come.

Thank you to everyone who supported us this year, whether it was a donation, an intention to leave a gift in your Will, participating or donating to one of our events or even liking and sharing our stories on social media. All your support is greatly appreciated and has a huge impact on the future of heart disease.

Thank you to our inspiring researchers, board of directors, staff and volunteers for your never wavering dedication to keeping families together for longer.

In this current uncertain environment, stay safe and take care.

Tony Crawford
Chairman

Message From Our CEO

If this last year has taught us anything, it has reminded us how truly important our loved ones and our health really are.

With a year that saw the start of the bushfires at the end of 2019 that raged all over the country devastating large parts of NSW, then flooding, and then the outbreak of the COVID-19 pandemic, it's no surprise that we've all re-evaluated or been reminded of our priorities.

With the country choking on bushfire smoke and the threat of COVID-19, our health, and the health of our loved ones has rightfully been at the forefront of all our minds.

At the time of writing, the WHO had confirmed a global death toll of 1.39M from COVID-19. In comparison, the WHO also states that the global death toll from cardiovascular diseases is an estimated 17.9 million lives each year. Regarding Australians, from the 1/1/20 - 28/7/20 there had been 7,563 Australian deaths from Ischaemic heart disease* compared to 724 from COVID-19^ from a similar time period.^ and at time of writing there had been 907 Australian deaths from COVID-19#.

Although the death rate for cardiovascular disease has come down over the last few years it remains the number one killer globally and in Australia, and there is still so much more to understand about the prevention, diagnosis, and treatment of heart disease.

Whilst COVID-19 is still a threat globally and for Australians, heart disease continues to be a significant threat. Our team has been working hard to build up our Heart Health Club to ensure that through this COVID-19 pandemic and beyond, our members and supporters are able to have access to content that enables us to do what we can to manage our heart health as well as having access to excellent content from our researchers and a range of experts.

Despite all that has been thrown our way this last year, the generosity and support from our community has been wonderful. Individuals have still organised fundraisers inspiring their peers to donate to support heart research, and some wonderful fundraising events were able to take place before COVID-19 surfaced.

As always, the collective contributions from many of our donors enables us to continue to invest in the breakthrough research our world-class and emerging researchers are doing in the prevention, diagnosis, and treatment of heart disease.

From myself, my team and all our researchers, thank you. Thank you for your generous support enabling us to continue this much needed fight against heart disease. Thank you for helping us make breakthroughs happen to help us keep families together for longer as like no other year, we have been reminded that family and the health of our loved ones really is everything.

Nicci Dent

Chief Executive Officer

**Australian Bureau of Statistics: Provisional mortality Statistics Jan-May 2020, released 19/8/20*
^Australian Bureau of Statistics, Provisional Mortality Statistics COVID-19 Mortality by August 31.
#Australian Government Department of Health Coronavirus (COVID-19) current situation and case numbers (22/11/20)

Our Work

About Us

Heart Research Australia was established in 1986 by concerned cardiologists at Sydney's Royal North Shore Hospital who recognised the pressing need to find new ways to reduce the high death rate and devastating impact heart disease has on families and the community. Unfortunately, many years on, although there have been some great improvements, heart disease is still the number one killer of all Australians[1].

The Heart Research AustraliaTeam.

Our goal is to reduce the devastating impact heart disease has on families and the community.

Our Vision

Making breakthroughs in heart disease happen.

Our Mission

We support world class and emerging researchers to conduct ground-breaking research into the prevention, diagnosis and treatment of heart disease.

Heart Research Australia supports:

Seed funding
First-stage or 'seed' funding allows researchers to turn their innovative, 'out of the notebook' ideas into reality. First-stage research often does not qualify for government funding; therefore, it is with thanks to wonderful supporters like you who make the investigation of such ideas possible.
Your generosity gives researchers the opportunity to progress their ideas into research that could result in lifesaving medical breakthroughs. Your support also helps them progress their research to a point where they become eligible, for larger, competitive grants from government funding bodies such as the National Health and Medical Research Council.

PhD students
Heart Research Australia provides scholarships for PhD students whose research work is supervised by some of Australia's leading cardiac researchers. These scholarships play an integral role in nurturing and developing some of Australia's most promising heart health scientists.

'Bench to Bedside'
Most of our senior researchers are also practising clinical cardiologists, which puts them in the best position to identify research opportunities and translate their discoveries 'on the bench' into benefits for patients 'at the bedside'. The breakthroughs they make contribute to and inspire the international body of knowledge on cardiac research.

Chairs of Cardiology
Heart Research Australia funds two academic chairs of cardiology in association with the University of Sydney and Royal North Shore Hospital, as well as specialist support staff for these positions: The Chair of Cardiology is held by Professor Helge Rasmussen and the Chair of Preventative Cardiology is held by Professor Geoffrey Tofler. They are not only highly acclaimed scientists but also offer invaluable mentorship to some of our most promising postgraduate students and early career researchers. They are building a base of faculty talent which enriches Royal North Shore Hospital and attracts a world-class team of high-quality investigators all focused on one thing: fighting heart disease.

[1]*3303.0 - Causes of Death, Australia, 2018. Australian Bureau of Statistics.*

How are we different from other heart organisations?

Heart Research Australia raises funds for innovative research into the prevention, diagnosis and treatment of heart disease.

Our **goal** is to reduce the devastating impact heart disease has on families and the community. The **focus** is seed-funding for cardiac researchers to investigate new areas. The **aim** is to make their work competitive for larger grants from national bodies such as the National Health and Medical Research Council.

As most of our researchers are practising cardiologists based at Royal North Shore Hospital, this places them in the best position to translate knowledge from the 'bench' to patients 'at the bedside'. This patient interaction assists them not only in the progress of their research, but also triggers and identifies new areas of heart disease requiring further investigation.

A good example of this bedside to bench research trigger is the discovery of an increasing number of patients, who are experiencing a heart attack, despite having no traditional modifiable risk factors, such as high blood cholesterol, diabetes, hypertension or a family history of heart disease. This finding is now being investigated by Heart Research Australia's researchers to identify new ways of diagnosing heart disease and enable early identification and treatment of these patients to better protect them.

You can help us change the future of heart disease and keep families together for longer!

Our researchers are on the threshold of life-saving breakthroughs however they need your support to help accelerate the impact of their research.

Your donations and the funds you raise, contribute to reducing the devastating impact heart disease has on families and communities, as well as helping to protect future generations.

There are many ways in which you can show your support:

- *Make a donation, or better still, become a 'Heart Hero' regular donor*
- *Make a gift in memory or celebration*
- *Host a fundraising event*
- *Participate in our annual 'RED FEB' event*
- *Purchase a ticket in 'Play for Purpose' (link on our website)*
- *Leave a gift in your Will – even small gifts can make a significant difference to Heart Research*

Every bit helps. Together, we can change the future of heart disease.

For further information visit our website heartresearch.com.au/support-us or call us on 02 9436 0056.

Cathy's Story

Despite living a healthy lifestyle, like many Australians, Cathy Licuanan has recently suffered from issues associated with heart disease due to a genetic pre-disposition.

With both her parents having had pacemakers installed and undergoing bypass surgery, Cathy knew what heart disease looked like. So even though she was young, fit and healthy and working as a swimming instructor - when the first warning signs appeared, Cathy knew she needed to act.

In late 2019 after a solid 3-hour session of teaching swimming lessons Cathy just "dropped and felt drained of all energy. No warning just severe fatigue. Apparently, I turned grey and all I wanted to do was lay down and sleep. I felt my heart jumping all over the place and felt extremely unwell. I thought it was my turn for the heart attack. My boss called an ambulance but by the time they got there the ECG showed my heart in perfect rhythm, like an athlete".

The first responders advised her to see her cardiologist for further investigation.

It was determined that Cathy suffers from Atrial Fibrillation which can be triggered by stress and overdoing things and for Cathy can lead to fainting and pure exhaustion.

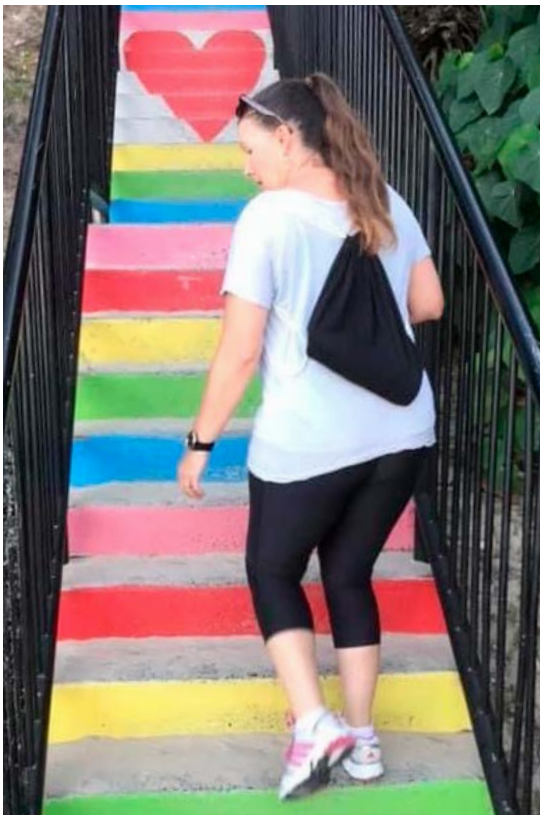
"I can walk 6km on one day and be fine and do it again the next and have to lay down for the rest of the evening. Occasionally I experience chest discomfort, which is scary".

Despite already being healthy Cathy has made further lifestyle changes to keep herself in check. She keeps an eye on her blood pressure, cholesterol, diet, stress levels and excessive exercise. Knowing that she has a genetic pre-disposition to heart disease Cathy says, "I'm trying my hardest to avoid anything which might be a helping hand for this terrible card I have been dealt."

"I am also seizing any opportunity I can to help invest in heart research, so I can change the future of heart disease for my children and future generations of my family and for the many others like us."

Fortunately for Cathy, her family is extremely supportive, with her husband often joining her for her daily walks.

Recently they flew from Brisbane to Sydney to join the Heart Research Australia team for the Sun Run event in February (see page 25 for more information on this event.) Despite her condition they managed the 7km walk from Dee Why to Manly and contributed to the $1800 collectively raised by the Heart Research Australia team for life-saving heart research.



Cathy is now back teaching swimming classes but on shorter shifts and is conscious to look out for any signs of exhaustion and to stop and rest when she starts having an episode. She helps manage her stress levels now by walking and getting lost in her artwork. A talented artist, Cathy frequently runs Paint and Sip classes for her local community, sharing her skills and talent with others.

Cathy is an ambassador for our Heart Health Club, inspiring and supporting many in their shift to a healthier lifestyle so they too can prevent and manage their heart disease. She is often on our Heart Health Club Facebook page offering support and tips to her fellow community members. She is also an ambassador for our RED FEB event coming up in February 2021.

Heart Research Australia is just so grateful for all the support Cathy has given us and all the inspiration she continues to give to us and our Heart Health Club members.

To join our Heart Health Club you can do so at: **www.heartresearch.com.au/heart-health-club/**

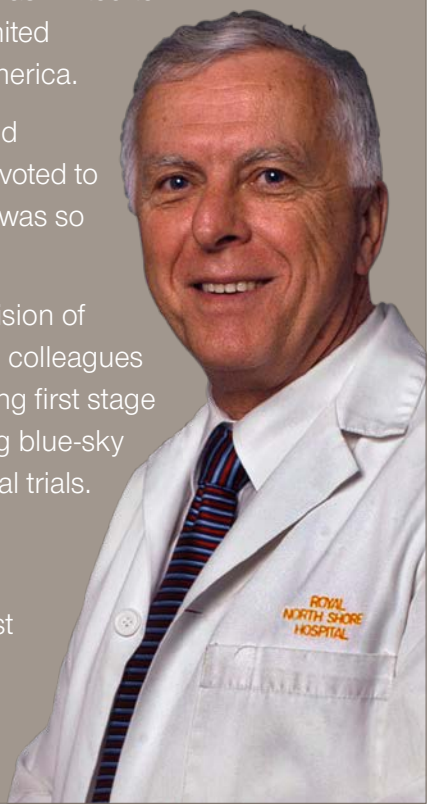
In Memoriam

Professor Stephen Hunyor

It is with deep sadness that we share the passing of one of our friends and founders, Professor Stephen Hunyor.

Together with Dr John Gunning, the late Gaston Bauer, John Holman (solicitor) and John Marks (patient), Professor Hunyor established the North Shore Heart Research Foundation (now known as Heart Research Australia) in 1986. Professor Hunyor and his colleagues recognised the growing need for a foundation to be established that would support the first stages of heart research aimed at reducing the alarmingly high death rates due to heart disease. They aimed to help raise funds to support 'out of the notebook' research that may never progress to clinical trials.

As a schoolboy Professor Hunyor had early visions of saving lives, dreaming of studying medicine at the University of Sydney. Not only did he achieve this dream, he also became Professor of Medicine at this same university and an exceptional cardiologist. Working across four major hospitals in Sydney - Concord, St Vincent's, Prince Alfred and Royal North Shore, Stephen won international praise for his innovative work on pacemaker technology in the late 1980s and was invited to speak at universities across the United States, Europe, Asia and South America.



Many have shared their respect and admiration for a man who "was devoted to his family, always had a smile and was so enthusiastic about his work".

We are incredibly grateful for the vision of Professor Stephen Hunyor and his colleagues to foresee the importance of funding first stage research to enable many life-saving blue-sky thinking ideas to progress to clinical trials. He left quite the legacy.

From your colleagues, friends and Heart Research Australia team past and present, you will always be missed and never forgotten.

In the News

World-first

Developing better treatments for heart attack patients using 3D bioprinting and stem cells.

Lead Researcher: Dr Carmine Gentile

Heart Research Australia was recently featured on Channel 7 news for the breakthrough work of Dr Carmine Gentile and his team.

In a world first, Dr Gentile and his team are studying how to 3D bioprint 'mini hearts' from patients derived stem cells to study heart attacks in test tubes. By mimicking the conditions that the human heart is exposed to during a heart attack, researchers will be better able to see the effects on a patient's own heart tissue to potentially develop better, more personalised and targeted treatments and therapies. This could be life-changing particularly for patients that suffer from sudden heart attacks, one occurring every ten minutes in Australia.

Our CEO Nicci Dent, along with Heart Research Australia Researcher, Dr Carmine Gentile and Poonam Sharma were interviewed by Helen Wellings from Channel 7, sharing this world-first research with Australia.

To learn more about Dr Gentile's work, go to page 40 of this annual report or view the 'Our Researchers' section of our website. To view the Channel 7 clip of this world-first research visit https://www.heartresearch.com.au/research/developing-better-treatments-for-heart-attack-patients-using-3d-bioprinting-and-stem-cells/

World-first

Reducing the risk of a 'broken heart' during bereavement.

Lead Researcher: Professor Geoffrey Tofler

It was with great excitement that Professor Geoffrey Tofler's most recent study highlighting how "common medication may lower the risk of a "broken heart" during bereavement" was published in the American Heart Journal early 2020. The study funded by Heart Research Australia was featured on ABC News with Michele Harris.

To view this clip or read more about this work visit https://www.heartresearch.com.au/research/cardiovascular-risk-reduction-in-bereavement/

You can read more about Professor Tofler's work on page 35 of this report.

World-leading Research

Is pre-eclampsia in pregnancy related to pregnancy induced heart failure?

Lead Researcher: Dr Anthony Ashton

Dr Anthony Ashton and our CEO Nicci Dent were featured on Channel 10 discussing Dr Ashton's work on Peri-Partum Cardiomyopathy (PPCM).

Pre-eclampsia affects 1 out of every 20 pregnancies in Australia and is the biggest cause of death in new mothers. It is also a predisposing factor to peri-partum cardiomyopathy, where the mother experiences heart failure in the last months of pregnancy or in the 6 months following it. Dr Anthony Ashton shared that he and his team have now identified that "the match that lights the fuse" in pre-eclampsia results from a change in the DNA of the placenta. This change causes the placenta to release factors that negatively affect the mother. The critical insight has allowed them to create a first-of-its-kind test which can be used to develop new drugs to combat both pre-eclampsia and peri-partum cardio-myopathy.

To learn more about Dr Asthon's work go to page 43

of this annual report or view the 'Our Researchers' section of our website. To view the Channel 10 clip of this world-first research visit www.heartresearch.com.au/research/pre-eclampsia/

World-leading Research

Heart Failure and Cardiovascular Magnetic Resonance Imaging – pathophysiological mechanisms, improved diagnosis and new treatment.

Lead Researcher: Professor Martin Ugander

Professor Martin Ugander was featured on Channel 7's 'House of Wellness' with Dr Nikki Stamp discussing his latest work in using cardiac magnetic resonance imaging (MRI) on diagnosing heart disease, myocarditis and heart failure as well as basic cardiac pumping physiology.

To hear Martin discuss his work with the team from the House of Wellness visit https://www.heartresearch.com.au/our-researchers/professor-martin-ugander/

Our Heartfelt Thanks

Thank you for helping us make breakthroughs happen. Your help enables us to keep families together for longer.

Gifts in Wills to help the hearts of future generations

Heart Research Australia is incredibly thankful to the men and women who help make our research possible through a gift in their Will. A large portion of our research is funded in this very special way. Last financial year, Heart Research Australia received $1,454,720 from Australians who remembered us in their Will.

Many people who leave a gift in their Will do so to say 'thank you' because they, or a loved one, benefited from the advances in medical research or as a way to help fund research that can protect future generations.

We would like to acknowledge our *'Breakthrough Partners'*. This very special group of people have told us that they have left a gift in their Will to Heart Research Australia. We love to hear if someone has made this decision so we can thank them and keep them informed about the current research taking place. Beating heart disease takes large amounts of investment and can take a decade before results are achieved. Long-term investments are needed to produce new discoveries and more effective treatments for heart disease. That's exactly why gifts in Wills are so important, even a small percentage can make a huge difference and helps to fund heart research well into the future.

Gregory Joseph Hagarty – a heart hero

29.04.1937 – 03.08.2018

In our midst are often unsung heroes and we discovered one of those when we received a substantial gift from the estate of the late Gregory Hagarty. We spoke to his friend Ken Bergin to get an insight into this generous man. Ken told us that Greg had an active interest in the Royal North Shore Hospital and its community. He was born at the hospital and it was there that he was treated for heart disease, which resulted in him receiving a pacemaker over 20 years ago. Being generous with his time as well, Greg gave back to the hospital spending over 20 years as a volunteer driver for those patients who needed to get to appointments. He was also a volunteer at his local outreach centre providing food and support to those in need in his local community. Like many cardiac patients, Greg also became an active member of the Cardiac rehab exercise group – the Pulsers – with whom he formed a strong and close friendship. A group who joined him in his passion for wining and dining! Ken describes Greg as a very warm person, who loved other people and who was great company. We at Heart Research Australia are grateful for the kind gift he left in his will, which will ensure Greg's legacy of helping others continues.

Regular Giving

We are so fortunate to have a generous group of supporters who choose to donate to us monthly and incredibly some of these amazing people have supported us for over 30 years. We call them our *Heart Heroes*. These monthly donations are so important to us as they provide a constant and reliable source of funds.

Knowing what funds we have available not only helps with the financing of our existing ground-breaking research, but also enables us to support any new and exciting projects which might come up.

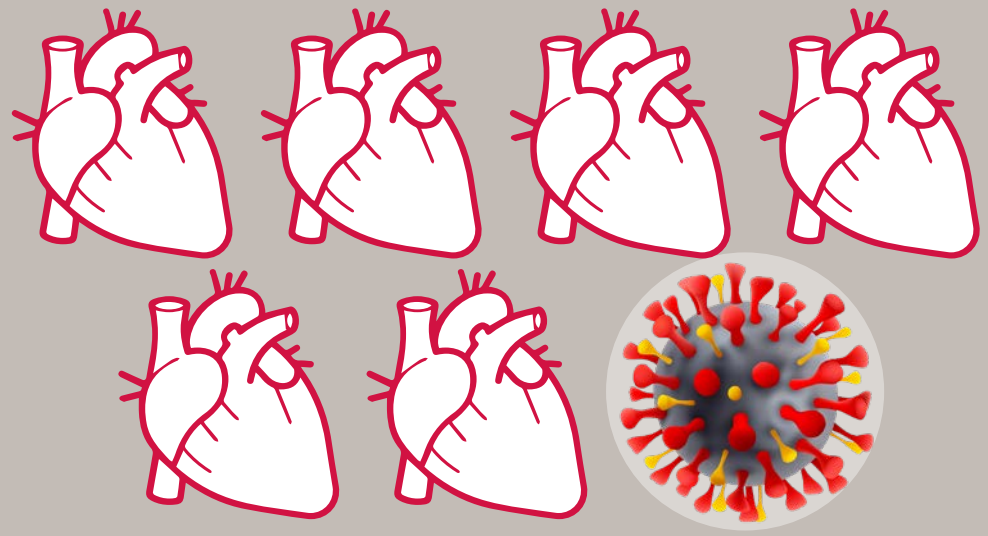
So, a big thank you to all our monthly donors, as your on-going commitment brings us closer to cures for heart disease.

Trusts & Foundations

We are particularly thankful to the following trusts and foundations supporting us in our mission to end heart disease:

Lady Proud Foundation,
Levy Foundation,
Mill House Foundation,
Skipper Jacobs Charitable Trust,
Wood Family Foundation.

*Almost **6 times** as many*
Australians died of Heart Disease
than died due to COVID-19.



***7,563** Australian deaths from Ischaemic **heart disease** 1/1/20 - 26/5/20* compared **907** Australian deaths from **COVID-19** 1/1/20 - 28/9/20#.*

**Australian Bureau of Statistics: Provisional mortality Statistics Jan-May 2020, released 19/8/20.*
#Australian Government Department of Health Coronavirus (COVID-19) current situation and case numbers (22/11/20)

Volunteers

Heart Research Australia is so grateful for all the incredible help we receive from our volunteers. The skills and time they share with us are essential to our work and we are so appreciative. Even whilst remote working through the COVID-19 situation, these wonderful volunteers continue to add so much value to the Heart Research Australia team. Thank you so much to all these wonderful individuals, for donating their time and sharing their skills to help keep families together for longer.

Carsten

Heart Research Australia has been so fortunate to have Carsten selflessly devote his time for a few years now.

With an abundance of knowledge from his background in IT, Carsten has been an invaluable asset to the team, particularly throughout the recent transition to working from home due to COVID-19. Sharing his expertise, Carsten has seamlessly integrated a number of communications channels, enabling us to stay connected to each other and our donors during this challenging period.

We are so incredibly grateful for everything that Carsten contributes to our team.

"With a family history of heart disease, I chose to volunteer for Heart Research Australia while having a break from work due to sickness. This role has given me immense satisfaction being able to use my skill set as well as contributing to a great cause."

Shirley

Shirley helped ease the workload of our team by assisting with postage and maintenance of our database. Her passion for heart health and volunteering was contagious and her beautiful bubbly personality was refreshing in the office. We are so grateful for all of her hard work this year.

"With my family's history of heart problems, I love feeling like I am contributing to protecting future generations from heart disease."

If you or someone around you was suffering from a heart attack, would you know what it was? Would you know what to do? Visit heartresearch.com.au/heart-attack to learn the symptoms of a heart attack as well as a heart attack action plan.

Corporate Supporters

Heart Research Australia is so thankful to the following corporate supporters and their staff for their significant support in helping us fund life-saving research. Their support is instrumental to helping us fund the breakthroughs that our researchers are on the cusp of discovering. Thank you for joining us in keeping families together for longer.

Abbott Vascular

Heart Research Australia are so grateful for the incredibly impactful support from Abbott Vascular this year.
Abbott is a major supporter of the Clinician Researcher PhD Program and donated $50,000 towards the program. This enables vital support for clinician researchers at a key moment in their development. They are part of Prof. Gemma Figtree's team and are working on the BioHEART study, aiming to identify novel mechanisms and markers of coronary artery disease. Through this funding the clinician researchers can access training such as conferences and courses to increase their knowledge and allow for consumable cost for the PhD program.
Abbott were also our supporting partner for our annual Wear Red Day event. Their support funded the mechanics and promotion of the event and made a significant impact on the success of the event and we can not express enough how grateful we are.

Herbert Smith Freehills

The Heart Research Australia crowdfunding event would not have been possible without the support of Herbert Smith Freehills. They kindly donated their offices with a beautiful view in Sydney CBD where we hosted the event and provided superb canapes and beverages.

The dedes Group

Year after year the dedes group continue to support Heart Research Australia and we are overwhelmingly grateful. This year they donated the use of their stunning venue for our annual Heart Health Lunch run by the Red and White Committee as well as donating generous prizes to events throughout the year.
Thank you so much for your continuous support every year in helping Heart Research Australia fund life-saving heart research.

Ormeggio, Chiosco & Via Alta

ORMEGGIO AT THE SPIT

Alessandro and Anna Pavoni, owners of Ormeggio at the Spit, Chiosco and Via Alta, not only donate generous prizes of their gorgeous venues to our Charity Challenge Golf Day events but Alessandro is also an Ambassador for Heart Research Australia. We are so appreciative of both him and Anna for sharing their personal stories, promoting the importance of heart health and for their continuous efforts to support us each year.

Giving the Gift of Life at Work

Heart Research Australia is so thankful to all the men and women who support our life-giving research by donating through their workplace giving programs. Every year more and more Australians are embracing this tax-affective mode of regular giving by making a regular donation to Heart Research Australia through their payroll from their pre-tax pay - thereby reducing their taxable income. Some employers also match the donations made by their employees, thereby doubling the impact of the donation.

Workplace or payroll giving is an easy and effective way to support pioneering heart research. It provides a reliable income stream that allows us to more effectively fund lifesaving heart research aimed at finding new and better ways to prevent, diagnose and treat heart disease – Australia's biggest killer. To learn more about this or to have a conversation with your organisation on how to get involved visit: www.heartresearch.com.au/workplace-giving/

Highlights From The Year

The enthusiasm and passion our supporters have for heart research is so inspiring!

We are so grateful to all the amazing individuals who organised, participated in or donated to any of the events we have hosted or that have been organised on behalf of us this year. The time and hard work devoted by these passionate fundraisers inspires us every day and helps us support our researchers and next generation young heart scientists find breakthroughs into the prevention, diagnosis and treatment of heart disease to ultimately save lives and keep families together for longer.

Heart Research Australia provides seed funding for heart research. As this type of first-stage research receives little government funding, we are 100% reliant on the generosity and passion of the community to support our dedicated researchers' work. Having this seed funding is so important for our researchers as it allows them to access the solid results needed to enable their work to be more competitive for larger government grants.

The support of these events has raised a grand total of over $102,763 for Heart Research Australia. We are so thankful to all fundraisers and supporters for this amazing result.

Kiama Power Fundraiser Football Game

In April 2019, a community football legend Darren Williams suffered a heart attack while on the sidelines watching his boys play football and unfortunately passed away, devastating an entire community.

When the time came for his sons and local team, Kiama Power, to play Figtree again back on home turf (the same game when Darren suffered his heart attack), his son Michael Williams reached out to Heart Research Australia to turn the game into a fundraiser for us. Support on the actual day raised $1965 with support via an Everydayhero link raising an additional $4,798.90.

We are so incredibly grateful to the Williams family and South Coast community for their ongoing support. We feel so privileged to have been able to play some role in honouring a man as loved as Darren Williams. To read more about Darren's story visit page 4 of this report.

South Coast AFL Grand Final Day

In honour of Darren Williams, South Coast AFL partnered with Heart Research Australia for their Seniors Grand Final Day with a percentage of all gate takings across the day going towards funding life-saving heart research.

We had the privilege of speaking to the crowd, sharing the importance of having a focus on one's heart health and encouraging all to get a Medicare funded heart health check.

The support from the day raised a total of $2000. It was an honour to be able to attend their grand final and speak with such a wonderful and passionate community.

A leap of faith

Jen's father (64) recently passed away unexpectedly one night from undiagnosed heart failure. On the anniversary of his passing Jen chose to honour her father and turn the day into something positive with the impact to help others.

With an incredible fear of heights Jen decided to face her fears head on and go sky diving in memory of her father to raise money for life saving cures into heart failure.

She safely completed her sky dive and raised an incredible $1755 for heart research.

We are so grateful for the wonderful support from Jen and are so proud of her facing such terrifying fears to help support life-saving heart research.

Highlights From The Year *continued*

Annual Heart Health Lunch

The Red and White committee so generously organised another successful Heart Health Lunch for Heart Research Australia on the 6th of September.

The Committee created such a wonderful atmosphere, the event looked gorgeous with chocolates and flowers at each table. There was an array of valuable prizes for the raffle and silent auction which raised over $14,000 towards the grand total.

We had the privilege of listening to Professor Helge Rasmussen and Dr Ashleigh Dind speak about their work on heart failure and helping protect the hearts of breast cancer survivors and were able to show the audience our segment on Channel 10 news supporting the work they were discussing.

With an attendance of 154 people they raised an incredible $26,428. These funds were used to support the PhD of Dr Chris Roche to work with Dr Carmine Gentile, one of our senior researchers, on a project aiming to use a bio-ink of individualised stem cells taken from blood or skin samples which are then converted to beating heart cells to make a personalised patch to regenerate parts of the heart that have died following a severe heart attack.

It was such a successful event and again we are so truly grateful to the Red and White Committee for their continued and enthusiastic support, year after year.
Thank you to all who made this event possible.

Live Crowdfunding

On the 24th of October 2019, Heart Research Australia's supporters came together for an evening of inspiring talks about heart research and collective giving. Together with The Funding Network we organised our first live crowdfunding event to help researchers showcase their latest heart research project in a fun and memorable way. Our researchers presented their work with a tight timeframe of 6 minutes.

Professor Gemma Figtree:
What is causing heart attacks in healthy adults – THE BioHEART Study. For more information on this project view page 38.

Professor Martin Ugander:
Better detection, earlier treatment and less deaths from heart failure. For more information on this project view page 39.

"My favourite moment of the night was the audience coming together and collaborating to contribute money where it really matters."

Dr Usaid Allahwala:
Why are certain patients with coronary artery disease able to grow new arteries and how does this happen? For more information on this project view page 42.

The audience were invited to ask questions to each of the researchers and when all the questions were answered the researchers left the room. ABC media personality James Valentine was the MC for the night and led a live and very engaging pledging session. A lot of laughs and hilarity was had! We are very thankful for the participation of many donors on the night. Collectively a total of $38,200 was donated. A special thanks also to Herbert Smith Freehills for providing the location and catering for the evening.

It was a wonderful event and we are so grateful to all who attended. A great night was had by all.

"Everybody got involved and was encouraging each other to give more. You get that sense of community from one of these events."

Highlights From The Year *continued*

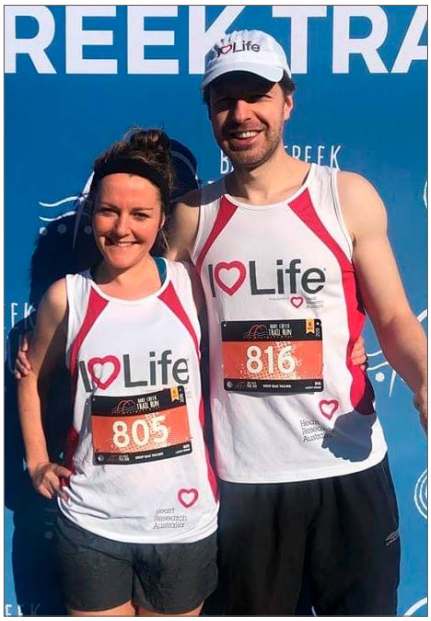
Bare Creek Trail Run

Miranda and Richard Symes and their 5-year-old son completed the Bare Creek Trail local fun run in November 2019 and chose to support Heart Research Australia.

"We've both made a donation and one on behalf of our son to Heart Research Australia. My friend's husband had a cardiac arrest a few months ago. He was rushed in for immediate surgery and his life was saved, simply owing to cutting edge research by the heart researchers. He has a 5-year-old daughter and she still has her daddy because of this."

In addition to this, both Miranda and Richard also ran a half marathon a few months later to fundraise for us being waved off by their children. We are so touched by them sharing their astounding story with us and choosing to support us to motivate them to train for and complete these runs.

It is so inspiring to see our amazing, proactive supporters prioritising their health whilst also raising funds for life-saving heart research.



Sun Run

Heart Research Australia had a team of over 20 runners complete the Sun Run 2020 on the 1st of February, a day scheduled to be over 40°! It was such a fun day with 2 Brisbane donors flying to Sydney to participate in our team (to read Cathy's story go to page 10 of this report).

The temperature was over 38° at 7am when the team ran the course from Manly to Dee Why but despite this, everyone had an absolute ball and celebrated finishing the event with breakfast afterwards.

The team were able to raise $1799 for completing the run which was an amazing achievement with the devastation of the bushfires raging through Australia at that time. Thank you so much to everyone who participated and donated to support the team!

"I just wanted to extend my utmost gratitude for being able to be part of the very special team on Saturday."

Highlights From The Year *continued*

Wear Red Day

WHO ARE YOU WEARING RED FOR?

Despite the tragic bushfires raging across large parts of Australia, individuals Australia wide still donned their red outfits and donated as a part of Heart Research Australia's Wear Red Day.

We were so excited to have Abbott Vascular come on board as our supporting partner for Wear Red Day 2020, their support helped fund the mechanics of the campaign and we are so grateful to them for everything we achieved because of their support.

A number of passionate campaigns ran around the country as a part of our "Who are you wearing red for?" campaign in memory of lost family members, or those with heart disease in the family wanting to stop the trend amongst their loved ones.

Images of work groups, individuals, dance studios, daycare centres, construction sites, schools, doctors' surgeries and hospitals, all in red, were flooding social media sharing so many incredible stories with HROz and Australia. Everyone had such a great time and it was heart-warming seeing so many smiling happy faces participating in the event.

Our ambassador for Wear Red Day 2020, Matt Shields who had recently suffered from a heart attack, co-ordinated the Man Walk in Kiama and did an extreme bike ride on the day to raise money for life-saving heart research.

We were so excited to be featured on Channel 10 and 7 news as well as Channel 7's House of Wellness! See page 13 of this report for more on these features and to see the clips.

Wear Red Day aims to raise awareness of heart disease as well as much needed funds into life-saving heart research. We are just so grateful to all who participated and donated to the event despite the bushfires that were burning through the country.


Who are you


Love

Highlights From The Year *continued*

Virtual 5km Fun Run

Brooke Williams is a 28-year-old fitness instructor and PE teacher, with a passion for highly competitive running.

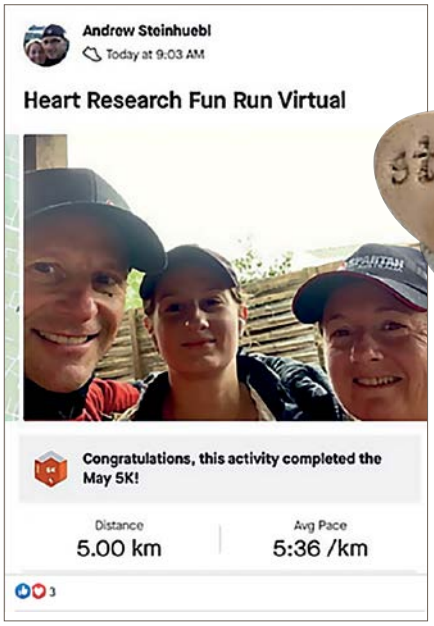
Amid Victoria's first lockdown for COVID-19 she organised a Virtual Fun Run to raise money for Heart Research Australia. In addition to wanting to raise funds for heart research, Brooke wanted to raise awareness of heart disease and to help get Australians moving through the first wave of COVID-19. She created a virtual event encouraging people to run (or walk) 5km in May and to donate $20 or more to Heart Research Australia. Participants uploaded their donation confirmation and data of their run to the Facebook event page. With the help of her mother-in law she also hand made some beautiful medals for the participants.

As someone who suffers from hypertrophic cardiomyopathy (HCM), a thickening of the heart walls, Brooke knows first-hand how important investment into heart research is. Brooke's condition is one that affects approximately 1 in 500 people however there are still many patients undiagnosed.

Andrew was one of the participants of Brookes Virtual fun run, running his 5km with his family at an average pace of 5:36 per km - an amazing effort! Thank you so much to Brooke Williams and all the wonderful people who participated in her event.

Brooke's Virtual Fun Run raised $906 towards life-saving heart research and we are so moved by her support.

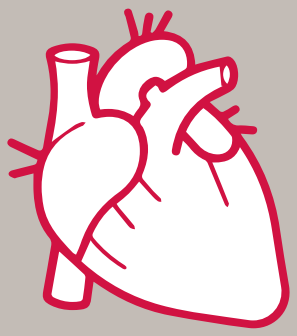
"I am so inspired to get the message out there about Heart Disease. Get your heart checked every 2 –3 years. Know the signs and be informed and proactive. Because I think it's better to know, then you are able to manage your condition and prevent catastrophic events from happening."



Charity Challenge Gala Dinner

Heart Research Australia was fortunate again this year to be chosen as a benefiting charity of the Charity Challenge Golf Series. This meant we also participated in the annual Charity Challenge Gala Dinner held every year to help raise funds for the charities in the series.

This event contributed over $12,000 to Heart Research Australia and we are so thankful to everyone who donated prizes, supported and contributed to this and to Gary Dawson OAM and Matthew Laverty for their repeated support of Heart Research Australia year after year.



Heart disease is the SINGLE BIGGEST CAUSE OF DEATH in Australia[1].

1 in 20 *Australians are* ***currently affected*** *by some form of* ***heart disease[2].***

1. 3303.0 - Causes of Death, Australia, 2018. Australian Bureau of Statistics.

2. 4364.0.55.001 - National Health Survey: First Results, 2017-18. Australian Bureau of Statistics.

Community fundraising is a great way to help make a difference to the future of heart disease and help protect the hearts of future generations.

What impact does your support to Heart Research Australia have?

The money raised by our wonderful community of fundraisers and the generous donations made by their family and friends;

- Helps communities access vital heart disease information and resources
- Ensures our researchers have the necessary laboratory equipment to assist them in their research findings
- Contributes to building and implementing research projects dedicated to exploring new ways of protecting Australia's hearts
- Goes towards the funding of world-class medical equipment
- Supports two Chairs of Cardiology and the next generation of researchers.

Highlights From The Year *continued*

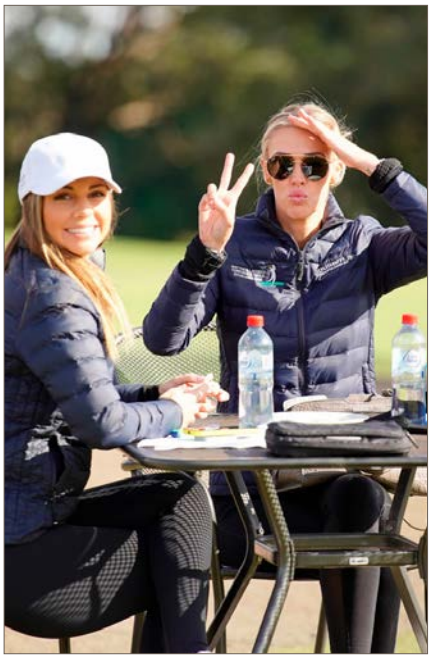
Charity Challenge Golf Day

Heart Research Australia is very grateful to Gary Dawson OAM & Matthew Laverty for their support in running the Charity Challenge Golf Series, raising funds for Heart Research Australia.

The Golf Day they so kindly organise for us annually has become an event very much looked forward to on many corporate golfing calendars. Many great friendships and business relationships have been formed at these events over the years with many laughs and fun had whilst enjoying a great game of golf and contributing towards raising much needed funding for heart research.

The 2019 event was hosted at Concord Golf Club. Participants not only experienced a fantastic round of golf, and a lovely lunch, but also had the opportunity to hear about the latest research being supported by Heart Research Australia.

The generosity of all who organised, attended, donated prizes and supported this event and the gala ball enabled us to raise over $13,067 through golf day entries, raffles and auctions and $12,325 from donated prizes at the gala ball. Thank you so much for your continued support – it is greatly appreciated.




Life is the heart of everything we do.

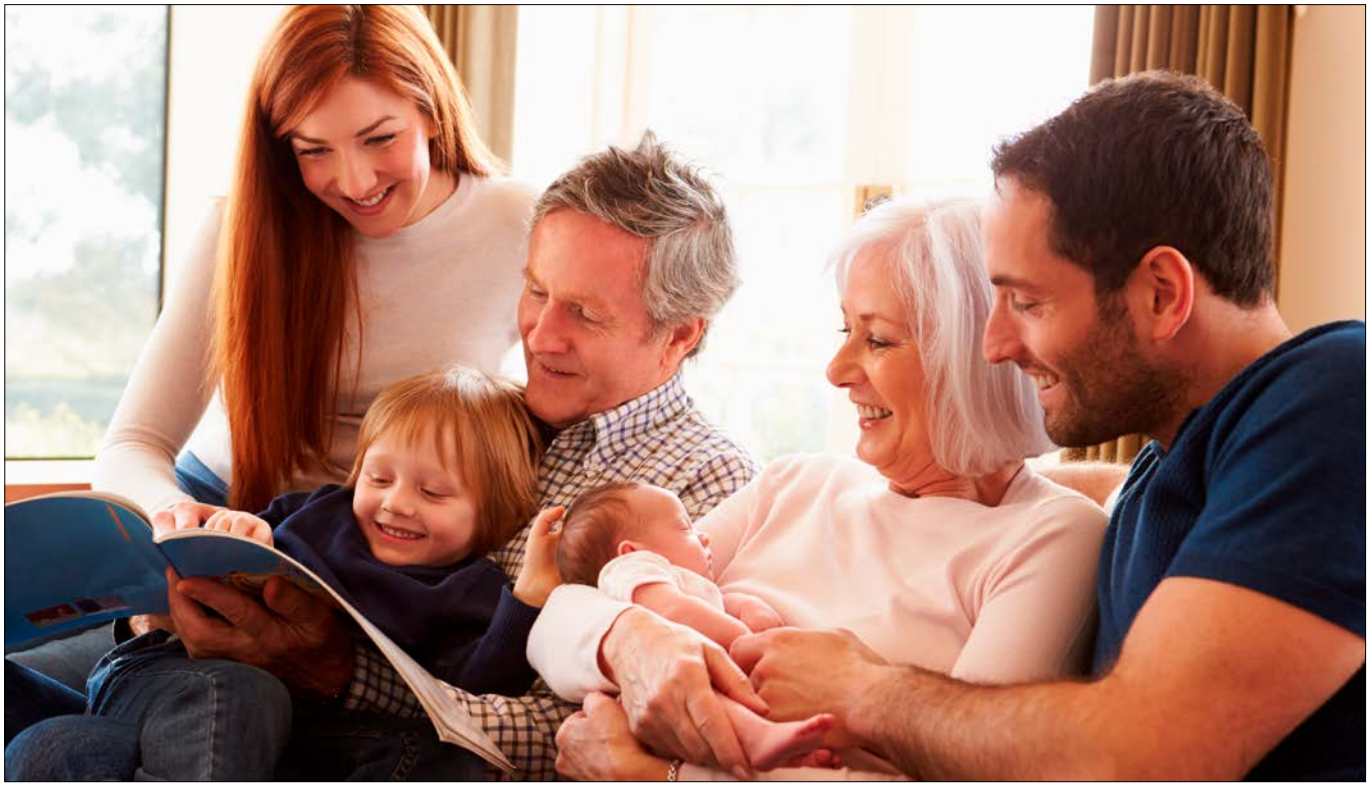

Heart Research Australia
Charity Challenge Golf Day 2019

Our Research

Keeping families together for longer through life-saving heart research

Heart Research Australia focuses on funding research identifying new ways to prevent, treat and diagnose heart disease, which remains the single leading cause of death in Australia.

This report features just some of the many exciting projects our researchers are working on, from using a patient's own cells to create mini beating hearts, finding a potential new risk factor for a heart attack, to finding a diagnosis tool for Peri-Partum Cardiomyopathy.
To read more about the work our researchers are doing visit www.heartresearch.com.au/our-researchers/ and sign up for our newsletter to stay up to date with the latest research and news as it becomes available.



Why research is so important

Heart disease kills one Australian every 29 minutes[1]. Despite major advances in the understanding and treatment of heart disease, there remains a large gap in our knowledge. Without further understanding of the disease and its diagnosis and treatment, families will continue to lose their loved ones to heart disease each year.

Research is imperative to shifting the current status quo of heart disease and reducing these devastating statistics.

1. 3303.0 - Causes of Death, Australia, 2017. Australian Bureau of Statistics.

Research Projects

Chair of Cardiology - Professor Helge Rasmussen

Professor Helge Rasmussen divides his time between working as a clinical cardiologist and leading a team of researchers in molecular and cellular medicine. A particular focus of his research is learning how heart cells work. This has led to discoveries that could mean better treatment for heart failure and other forms of cardiovascular disease. Professor Rasmussen's work includes studies directed at understanding regulation of the cardiac Na+-K+ pump. His basic science research has led to paradigm shifts in the understanding of this regulation. Some of this has implications that are not restricted to cardiovascular disease.

Preventing cardiac side effects from breast cancer treatment

Project Title:
Development of novel method to reduce radiotherapy-induced heart damage in breast cancer.

Lead Researcher:
Prof Helge Rasmussen

Amount: $194,845

Whilst cancer treatments are effective against many cancers, heart muscle damage and heart failure are a serious side effect. It is not uncommon that the life expectancy of cancer patients is reduced due to heart disease brought on by the cancer treatment, rather than by the cancer itself. With the increase of total treatment dose, the risk of heart damage increases.
As the heart lies directly under the breast when treating breast cancer, the heart can also receive doses of radiotherapy, increasing the risk of heart damage and heart failure in the future.
Professor Rasmussen discovered overexpressed FXYD3 in some cancer cells protects them against treatments, including radiotherapy.
In a novel approach to reduce heart muscle damage for patients undergoing breast cancer treatment, Professor Rasmussen and his team developed a small protein molecule (peptide) that displaces highly expressed FXYD3 in breast cancer cells. To test if this might sensitise cancer cells to treatment the team exposed the cancer cells to the peptide in test-tube experiments. The result of test tube studies was effectiveness of chemotherapy was increased nearly tenfold when the peptide was applied to the cancer cells. While the sensitivity of the cancer cells to the drug greatly increased, its effects

Research Projects

Preventing cardiac side effects from breast cancer treatment *continued*

on non-cancer cells was much less pronounced, potentially reducing heart damage if it were to be applied in treatment of humans.
The next stage of this research is to determine if the peptide sensitises tumours of human breast cancer cells grown in mice to X-ray radiation.
A sensitisation would allow maintained effectiveness of radiotherapy with reduced radiation dose hence reduced risk of heart damage.
This research not only has the potential to make breast cancer treatments more effective while reducing the risk of damage to the heart muscle but also has the potential to help prostate and pancreatic cancer treatments since many cancers of the prostate and pancreas also express high levels of FXYD3. Progress of this project has been hampered by the COVID pandemic however as of September 2020, work on the project has resumed.

A novel combination of heart failure

Lead Researchers:
Prof Helge Rasmussen,
Dr Chia-Chi Liu,
Dr Elisha Hamilton

Heart failure is the leading cause of disability and death in the world. While many drugs are used in treatment, this innovative research has discovered that a new group of drugs, β3-AR agonists (one of which is already used as a treatment for an overactive bladder), are beneficial for heart failure treatment.
The team found that administering β3-AR agonists can reduce sodium overload in heart muscle cells and decrease oxidative stress in heart failure. They found that sodium export from heart cells was markedly reduced in rabbits with severe heart failure. Treatment with β3-AR agonists completely reversed this abnormality and, in parallel reversed the signs of heart failure. The work has been published in the article listed below:
Fry, N. A., C. C. Liu, A. Garcia, E. J. Hamilton, K. Karimi Galougahi, Y. J. Kim, D. Whalley, H. Bundgaard and H. H. Rasmussen (2020). "Targeting cardiac myocyte Na+-K+ pump function with β3 adrenergic agonist in rabbit model of severe congestive heart failure." Circ Heart Fail 2020;13:e006753. DOI: 10.1161/ CIRCHEARTFAILURE. 119.006753.
In collaboration with the Department of Cardiology at the National University Hospital in Copenhagen, Denmark we have conducted a study in humans with severe heart failure, reflecting the status of the rabbits referred to above. All patients were on maximal conventional treatment as tolerated. We measured cardiac output and resistance to blood flow in the general circulation as well as in the lungs. Patients were given a β3-AR agonist in addition to the conventional treatment or inactive placebo tablets.
The human study briefly described above has been completed and data analysed. Due to confidentiality agreements results cannot be disclosed at present. However, a manuscript is being prepared for submission to a scientific journal and will become publicly available.

Chair of Epidemiology – Professor Geoffrey Tofler

Professor Geoffrey Tofler is the Chair of Epidemiology at Royal North Shore Hospital. With over 20 years' experience as a clinical consultant cardiologist, including 13 years at Harvard Medical School Hospital in Boston, Professor Tofler's expertise is in the prevention of heart disease and management of heart failure. Current research includes triggers for heart attack and the links between bereavement and heart health.

Professor Tofler continues to look at new approaches to prevent heart disease, as well as ways to maximise the outcome of patients with known disease. His research group's work ranges from population and clinical research to basic genetic level, with local, national and international collaborations.

Reducing the risk of a 'broken heart' during bereavement

Professor Geoffrey Tofler and his team published their world-first research study, funded by Heart Research Australia, in the American Heart Journal this year. This research study highlighted the risk of suffering a heart attack and death among bereaved people and how this risk can be reduced.

Their research showed that using common medication in a novel way, can help lower the risk of a heart attack from the grief reaction during bereavement.

Bereavement following the death of a loved one, particularly those grieving a spouse or child is one of the most stressful things one can experience.

The 2 main questions Professor Tofler and his team focused on through this research were:

1. Why was this risk increased?
2. Is there something we can do to help people at that difficult time?

Tom Buckley, a former PhD student whose work was funded by Heart Research Australia, studied the changes that occur in bereavement – and found an increase in blood pressure; increase in heart rate and increase in blood clotting that could increase the risk of a heart attack. At the same time, the study highlighted the well-known increase in anxiety and depression amongst recently bereaved patients.

The team then focused on which medications have been shown to counteract these changes in other situations and if they would work in a bereavement setting.

"This research study is the first clinical trial in the world to examine how cardiac risk factors could be alleviated during early bereavement."

The results showed that the low dose, once a day active medication, successfully reduced spikes in blood pressure and heart rate. It also demonstrated some positive change in blood clotting

Research Projects

Reducing the risk of a 'broken heart' during bereavement *continued*

tendencies and showed no adverse effect in the bereavement process: in fact, a reduction in symptoms of anxiety and depression were observed. After treatment stopped there was still some benefit to treated patients with blood pressure and anxiety at 6 weeks.
The results from this study provide important news for clinicians in how they manage people processing bereavement and should be considered in people that may be at high risk during this time.

Triggers of Heart Attack and their prevention

Professor Tofler and his research group have been leaders in the field of acute triggers of heart attack – providing additional clues to prevention that complement chronic risk factors such as hypertension and high cholesterol. The group developed and have used the TAMAMI database of patients who had heart attacks that were treated at Royal North Shore Hospital, to look more closely at specific triggers. A/Prof Tom Buckley, published a manuscript on Physical Exertion as a Trigger of Heart Attack. Another paper by the group, examining Heavy/Fatty Meals as a trigger, is currently under review for publication (Dr Lorcan Ruane, first author).
These findings are being used to provide justification for a proposed larger study of Triggered Acute Risk Prevention.

SCUPI (Smoking Cessation through Personal Identification)

This novel approach to smoking cessation, which was supported by a grant from Heart Research Australia, a SPARK innovation award, and an Australian patent, uses video to create a simulated teachable moment. It builds on the observation that many smokers can stop smoking once they have experienced a heart attack. In a recent internet-based study, over 60% of the smokers successfully stopped smoking and were still abstinent at 6 months. These findings were published by the Journal of Smoking Cessation with psychologist, Robin May, as first author). Professor Tofler and his research group are currently looking to expand the work.

Framingham Heart Study Collaboration

This ongoing international collaboration with Framingham, Massachusetts, investigates the role of Haemostatic Risk Factors, and Genetic Determinants, in Cardiovascular Risk Prediction. This collaboration saw an important publication into novel associations regulating coagulation Factor VIII and von Willebrand Factor plasma levels, which was published in the prestigious US journal, Circulation.

MACARF (Management of Cardiac Failure)

Professor Tofler is medical director of the Northern Sydney MACARF program to optimise management of heart failure. Analysis of the database of over 5000 patients has resulted in a recent publication (Dr Nelson Wang, first author) examining temporal changes in heart failure characteristics and outcome. In addition, a short paper on the prognostic role of heart rate in heart failure has been accepted for publication in a peer-reviewed journal. A quality improvement project on polypharmacy in heart failure is currently being conducted in collaboration with pharmacy collaborators.

PADDLE (Patient Directed Discharge Letter)

Professor Tofler and his team received a $200,000 grant from HCF to further develop his published findings that a one-page discharge letter written specifically for the patient using lay language, improved patient understanding of their hospitalisation and discharge plans. This project includes North Shore Private Hospital, Ryde Hospital and Royal North Shore Hospital. Professor Tofler is currently on a NSW Health Committee to improve hospital discharge summaries. There is the exciting possibility that PADDLE will be rolled out state-wide.

MAFACARI (Masters Football and Cardiovascular Risk)

In 153 masters age footballers, Professor Tofler and his research group conducted a survey to assess the footballer's knowledge of their cardiac risk, warning symptom recognition, and support of measures such as defibrillators. The findings showed that there was a significant amount of cardiac risk factors among the group, that many of the potential cardiac risk factors were not appropriately acted upon, and that there were gaps in knowledge of heart disease risk. There was strong support among the group for defibrillator availability. The findings were presented by Matthew Francis, medical student, at the 2019 Annual Australia and New Zealand Cardiology Conference.

As medical director of the North Shore Cardiac rehabilitation service, Professor Tofler encourages and supports clinical research from the rehabilitation service based on the patient characteristics and excellent outcomes.

Research Projects

Discovery of new mechanisms for coronary disease

Project Title:
Discovering new mechanisms and early markers of coronary artery disease and protection against heart attack –
The BioHEART Study.

Lead Researchers:
Prof Gemma Figtree

Amount: $118,318

Cardiovascular disease continues to be the leading cause of death for Australians with enormous social and economic impact across the globe.
Professor Figtree and her team developed the BioHEART project to look for novel blood markers and mechanisms that identify people with atherosclerosis well before they suffer any untoward events such as a heart attack or cardiac arrest. They are also investigating factors that may explain individual susceptibility and resilience to the well-established cardiovascular risk factors, aiming to identify new markers and therapies to reduce the burden of cardiovascular disease.
The BioHEART study combines advanced non-invasive imaging of the coronary arteries with biobanked blood samples for comprehensive molecular characterisation. The team have been building a BioBank using a large cohort study of patients who are at risk or suffering from coronary artery disease. These patients volunteer, and consent to contribute a blood sample and their de-identified data to the study. The team have continued to expand the study thanks to pilot funding from Heart Research Australia.
Professor Figtree and her cross-disciplinary team of clinicians, researchers, healthcare and industry leaders have made significant progress in their search for novel early coronary artery disease markers to detect and prevent heart attacks in patients who do not present with traditional risk factors of heart disease. Within the BioHEART study, they have recruited 1800 patients who are at risk or suffering from coronary artery disease and are close to completing the screening of the first 1000 patient samples using emerging technologies to identify new blood biomarkers spanning across the entire biology of a patient including genomics, metabolomics, lipidomics, immunophenotyping and proteomics. The team continue to expand the collaborative research team nationally and internationally and are currently working on opening 5 new study sites in Australia. Thanks to the generosity of donors, the dedicated team has moved closer to the next leap in the improved therapeutic care of patients with coronary artery disease.
The work done by Professor Figtree and her team will help improve early identification of coronary artery disease and atherosclerosis beyond traditional risk factor assessment and will help guide personalised preventative therapies.

Heart Failure and Cardiovascular MRI

Project Title:
Heart Failure and Cardiovascular Magnetic Resonance Imaging – pathophysiological mechanisms, improved diagnosis and new treatment.

Lead Researcher:
Prof Martin Ugander

Amount: $128,815

Heart failure affects about 40 million people worldwide, equating to 2% of all adults and 6-10% of people over 65 years of age. Once diagnosed, heart failure leads to 50% mortality within 5 years, which is poorer survival than for most cancers. This equates to a large patient group with a sizable burden of hospitalisation and premature death.

Professor Martin Ugander's research partially funded by Heart Research Australia focuses on developing and using unique, boldly novel, state-of-the-art methods to address currently unmet clinical needs with regards to methods to better understand, diagnose and evaluate treatment of heart failure.

Professor Ugander's research specifically focuses on the challenges related to:

- **Identifying and treating inefficient filling of the heart (diastolic dysfunction) -** Professor Ugander's team have developed pioneering new MRI methods to provide accurate measurement of the speed of movement of the heart during filling and blood pressure in different chambers of the heart. They will be evaluating these new non-invasive MRI measures compared to reference measurements in patients. The team have also identified that surgical reduction in the size of the left atrium of the heart may improve the efficiency of filling, and they are evaluating this hypothesis.
- **Thick walls of the heart (left ventricular hypertrophy) -** the team have developed new methods to better diagnose thick walls by both MRI and the electrical activity of the heart using electrocardiography (ECG). The accuracy and utility of these new methods is to be evaluated in patients.
- **Small vessel disease -** A reduction in blood flow to the smallest vessels of the heart (coronary microvascular dysfunction). The accuracy of a new ECG method to diagnose small vessel disease, as shown by MRI, is to be evaluated by Professor Ugander and his team.

These three problems are more common with increasing age, are more common in women and indigenous populations, and have been shown to be associated with hospital admission and death.

The results of Professor Ugander's research will potentially benefit all patients being evaluated for known or suspected heart failure. This equates to a large patient group with a sizable burden of hospitalisation. More accurate diagnostic methods lead to earlier detection, earlier treatment, decreased morbidity and mortality, and decreased costs for the healthcare system. In addition, the new methods will also provide an important ability to accurately and non-invasively study the effects of new treatments for heart failure, which ultimately will come to clinical use. This indirect clinical role as an improved tool for scientific evaluation of new therapies should not be underestimated.

Research Projects

3D bioprinted heart 'replacement parts'

Project Title:
Developing 3D bioprinted personalised 'replacement parts' for heart attack patients.

Lead Researchers:
Dr Carmine Gentile

Amount: $30,000

In a world first, Dr Carmine Gentile's team are studying how to 3D bioprint 'mini hearts' from patients-derived stem cells to study heart attacks in test tubes. By mimicking the conditions that the human heart is exposed to during a heart attack, researchers will be better able to see the effects on a patient's own heart tissue to potentially develop better, more personalised and targeted treatments and therapies. This could be life-changing particularly for patients that suffer from sudden heart attacks, one occurring every ten minutes in Australia.

Damaged heart muscle currently leads to heart failure and ultimately death. For patients with end-stage heart failure, the current gold standard treatment is a heart transplant which comes with a significant number of risks as well as limited availability.

Dr Gentile works to create bioprinted heart tissues generated by isolating cells from patients' own skin or blood, which are first used to generate stem cells and then transformed into heart cells. Dr Gentile and his team have developed a new way to use these cells to generate personalised 'minihearts' that are loaded into the nozzle of a 3D bioprinter that can produce patient specific 3D printed heart tissue to study how the same patient would react to a heart attack.

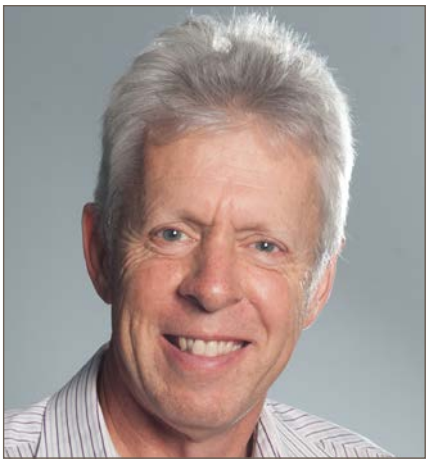
Funding from Heart Research Australia enabled Dr Gentile to purchase a Panlab Organ Bath System to evaluate and test bioprinted cardiac patches. The heart tissue is tested to make sure that it contracts like a healthy heart and one day could be safely transplanted in patients. Heart tissue that contracts irregularly may lead to arrhythmia, a dangerous and deadly complication for the patient.

The team is also testing if there are drugs or genetic conditions that improve or worsen how bioprinted patient-specific heart tissues contract following a heart attack. This means no need for animal testing and better outcomes for the patient.

Not only can Dr Gentile's bioprinted heart tissues be used to study the effects of a heart attack in patient, but they can also be used in a test tube to identify unpredicted side effects of medications on the heart of a patient. For instance, some chemotherapies can damage a heart and make it fail over time in some cancer patients. In particular, doxorubicin, a drug used to treat lymphoma and leukemia in children and breast cancer in women, is responsible for damages to their hearts even after 17 years following this treatment. The equipment funded by Heart Research Australia for Dr Gentile helps detect these side effects within minutes. Preliminary studies have demonstrated that medication can be deemed safe for the patient or not before it is administered - enabling them to potentially seek advice from a doctor for a safer therapy.

"This research could be life-changing for patients who suffer from sudden heart attacks."

Newborn Cardiac Research Projects



Project Title:
Newborn Cardiac Research Projects.

Lead Researchers:
Prof Martin Kluckow

Funded by:
The Mill House Foundation

Amount: $43,417

Heart Research Australia and the Mill House Foundation have been supporting newborn cardiac research projects in the department of Neonatology at Royal North Shore Hospital for over 23 years. The research led by Professor Martin Kluckow collaborates with several other hospitals around Australia to develop and conduct new clinical studies in their quest to understand the problems with heart function in premature and sick infants. More than 70 articles have been published and results from the studies conducted by Prof Kluckow have helped shape current practices as to how we treat cardiovascular problems in our tiniest patients locally and around the world.

The salary support of a research nurse for the last 17 years has been pivotal in the participation in several national and international multicenter trials. Research nurse, Ms Yan Chen, provides key support in the follow up of several of the recent cardiovascular trials including the TITAN study, which is examining the effects of a delay in clamping the umbilical cord at birth on the blood volume, hemoglobin levels and need for blood transfusions in very premature babies. 146 babies will be enrolled into this substudy of the Australian Placental Transfusion Study. The team is also finalising and collecting data for the SMART or uPDA study which is a randomised placebo-controlled pilot study of early closure of the PDA (patent ductus arteriosus) in very preterm infants.

Due to improved practices, even the tiniest of our premature patients increasingly survive their initial NICU stay and grow up free from major disabilities. With more extremely premature babies growing up to adulthood, it is becoming obvious that there are late sequelae of prematurity not previously acknowledged. An infant born more than three months early is more than twice as likely to require treatment for arterial hypertension as a young adult compared to an infant born at term. Even infants born closer to full term, i.e. only 5 to 6 weeks early, still have a significant increased risk of suffering from hypertension as an adult compared to a full-term birth. This poses a relevant burden of future cardiovascular disease on the individual and the health care system overall, as unrecognised hypertension in a young adult can cause much morbidity.

A new study will focus on tracking the development of kidneys in premature babies. Over the next three years, approximately 80 preterm and term babies will be followed from their birth at different weeks of gestation until they reach 1 year of age by new techniques of ultrasound imaging of blood vessels in the kidneys and aorta, blood pressure measurements and measurement of kidney function.

With the insights from this study, Prof Kluckow and his colleague Dr Eveline Staub, aim to shed light onto the late cardiovascular consequences of premature birth. Ultimately, increased knowledge of the mechanisms leading to hypertension will help identify those at highest risk, allowing early intervention to prevent later heart disease.

Research Projects

Growing new arteries

Project Title:
Growing new arteries – an alternative for stent or bypass surgery.

Lead Researchers:
Dr Usaid Allahwala

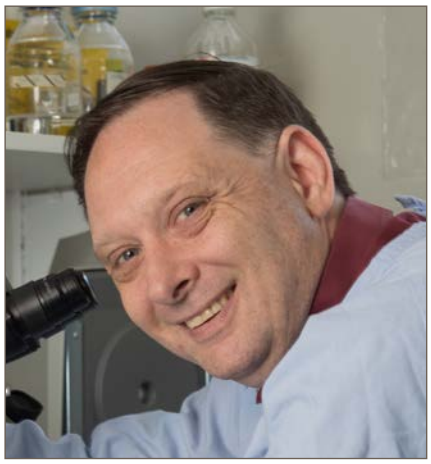
Amount: $74,200

Coronary artery disease affects 4.2 million people in Australia. Unfortunately, for up to 20% of these patients, stenting or bypass are not suitable procedures for them and there is currently no optimal treatment strategy for these patients. Dr Allahwala, Consultant Cardiologist at Royal North Shore Hospital, is seeking an alternative effective treatment strategy for this group of patients.
A chronic total occlusion (CTO) is found in 10-20% of patients undergoing coronary angiography.
A CTO occurs when there is a blocked or occluded artery which supplies oxygen and blood to the heart, as occurs during a heart attack.
Dr Allahwala found through pilot studies that some patients with a CTO can develop and mature new arteries, called collaterals. These collaterals supply the heart muscle with blood and oxygen, thereby preventing a heart attack. The reasons and mechanisms why some people can develop new arteries and others can't is unclear. The effect collaterals have on blood pressure and flow within the coronary vessels is also unknown.
Identifying the drivers of recruiting collaterals, is the first step in determining future therapeutic targets for medications or invasive procedures. By performing comprehensive flow and pressure analysis in patients able to recruit collaterals, as well as identifying proteins, cells and molecules in the blood, these future targets may be identified.
A grant from Heart Research Australia has enabled Dr Allahwala to work on understanding why certain patients with coronary artery disease are able to develop collaterals. His team has continued to gather information and scientific data on patients with collaterals. With the generous support from donors from Heart Research Australia, the team has been utilising state of the art equipment to gather data on 65 patients with new arteries. This has allowed the team to look for possible chemical and biomechanical causes of collateral development.

"This study could lead to alternative treatment options and improved outcome in patients for who currently there is no viable long term effective treatment available, that is potentially 20% of patients whom cardiologists see on a daily basis."

He has published his interim data and work in the American Journal of Cardiology. Dr Allahwala is also currently working on exciting research looking at a possible link between obstructive sleep apnoea, snoring and developing collaterals, collaborating with researchers across Sydney.

Pre-eclampsia and Peri-Partum Cardiomyopathy



Project Title:
Is pre-eclampsia in pregnancy related to pregnancy induced heart failure?

Lead Researchers:
Dr Anthony Ashton

Funded by:
Anonymous Trust & Foundation

Amount: $150,000 over 3 years + $60,000 for equipment

Unfortunately for some women, some pregnancies end in unforeseen and currently untreatable complications.
The signs that something is wrong in these pregnancies are unfortunately "normal" for most women at the end of pregnancy. Headaches, swelling and difficulty breathing are "par for the course" for the latter stages of pregnancy but may belie an underlying and dangerous pregnancy complication called pre-eclampsia.
Pre-eclampsia affects 1 out of every 20 pregnancies in Australia and is the biggest cause of death in new mothers. The disease is a serious challenge for obstetricians because there are no effective interventions to treat, prevent or diagnose it. It is also a predisposing factor to another life-threatening complication of pregnancy, peri-partum cardiomyopathy, where the mother goes into heart failure in the last months of pregnancy or in the 6 months following it. In fact, more than 40% of women with pregnancy induced heart failure have had high blood pressure during their pregnancy. Both conditions are life threatening and without treatments.

Dr Ashton and his team have now identified that "the match that lights the fuse" in pre-eclampsia results from a change in the DNA of the placenta. This change causes the placenta to release factors that negatively affect the mother.
This critical insight has allowed them to create a first-of-its-kind test which can be used to develop new drugs to combat both pre-eclampsia and peri-partum cardiomyopathy. To find these drugs, the team are currently engaging with pharmaceutical companies to choose the "diamond in the rough" that will become the first prototype agent for curing pre-eclampsia.

Dr Ashton has also created links with international researchers with the aim of characterising the DNA of women with pre-eclampsia and peri-partum cardiomyopathy to see why some women with pre-eclampsia develop heart failure while others don't. These findings will continue to unravel the mysteries of these two conditions and provide opportunities for development of new diagnostics for early detection of both conditions.

"Our goal is to develop the next generation of cures and diagnostics that will mean no parent has to feel the sense of desperation and loss associated with problematic pregnancies."

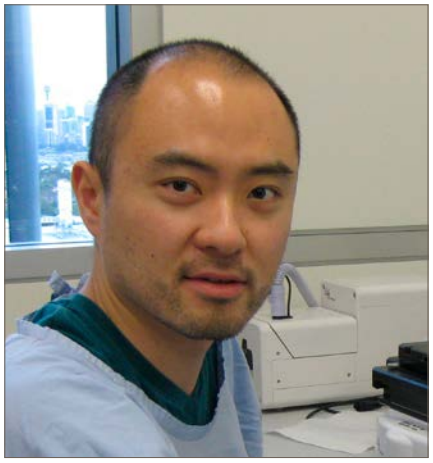
The team is embracing new and exciting technologies in the pathology lab that will allow them to tailor treatments to each individual pregnancy so that treatment for these conditions can start earlier and address the specific needs of each mother.
The ultimate goal of this research is to ensure a complication free pregnancy for every mother and the healthy delivery of all babies in our care.

Research Projects

Dr Elisha Hamilton - Laboratory Manager for Professor Helge Rasmussen

Dr Hamilton is responsible for all experimental work that is conducted within Professor Rasmussen's laboratory as well as providing a supervisory role to students within the lab. The main focus of the experimental work carried out at the moment is addressing how we might reduce damage to the heart caused by radiation treatment for breast cancer. Her role as Laboratory Manager requires that she balances the scientific needs of the laboratory staff and students with the business needs of the lab. Her duties include the maintenance of laboratory equipment, procurement, data management, budgeting, training and liaising with collaborators. In addition, Dr Hamilton acts as the work health and safety representative for the laboratory group, as well as being responsible for the preparation and submission of funding applications, scientific manuscripts and ethics applications.

Owen Tang - Laboratory Manager for Professor Gemma Figtree



Professor Figtree's Laboratory focuses on identifying novel mechanisms and therapeutic targets for the treatment of cardiovascular disease. The key aim of the team is to facilitate early detection of disease and to improve preventative strategies and patient outcomes through an integrated research program of translational and clinical research. Dr. Owen Tang is an integral part of the team, driving research output, management of the laboratory, and mentorship of post-graduate and early career researchers. Despite the heavy impact of COVID-19 on facilities, Dr Tang has successfully completed the metabolomic analysis of 1500+ patient samples from the BioHEART study using a state-of-the-art HPLC equipment, with the aim of identifying novel blood biosignatures of early coronary artery disease. Outcomes from this study align with Professor Figtree's vision for all Australians to be able to quantify early atherosclerotic signals occurring in their arteries by integrating known modifiable risk factors with new biomarkers reflecting key molecular events, and to intervene with personalised, evidence-based strategies to bring a halt to the process long before plaque development/rupture occurs.
In addition to being an integral

part of BioHEART's success, Dr Tang is also responsible for the overall management of the laboratory, with responsibilities in implementing WHS protocols, overseeing the procurement of consumables, onboarding and training of new team members on the PC2 environment, ethics applications, and ensuring access to essential research infrastructure. As a result of these collaborative efforts, Professor Figtree's laboratory has grown significantly over the last two years as the team has expanded the innovative program at the intersection of patients and discovery.

HEART DISEASE

Kills one Australian every

29 MINUTES[1]

1 in 5

Australian adults have ***high blood pressure -***

one of the risk factors for heart disease[2]

1. 3303.0 - Causes of Death, Australia, 2018. Australian Bureau of Statistics.

2. 4364.0.55.001 - National Health Survey: First Results, 2017-18. Australian Bureau of Statistics.

Scholarships funded by Heart Research Australia

Dr Chris Roche

Dr Chris Roche, a cardiac surgical trainee, has brought surgical skills and insights to the team supervised by Dr Carmine Gentile - a bioprinting expert who is working towards producing heart patches made of special 'bio-ink'. Together, their project aims to regenerate parts of the heart that have died following a severe heart attack and help heart failure patients. The 'bio-ink' uses individualised stem cells taken from blood or skin samples which are then converted to beating heart cells.

Dr Roche is working with Dr Gentile to optimise the bioprinting technique and then transplant the patches in animal heart surgery tests. They have completed the optimisation phase where their 3D bioprinted heart patches were optimised in the laboratory. They have also generated certain types of stem cells (called induced pluripotent stem cells) where they reprogrammed regular skin cells back into a stem cell state. Stem cells are difficult to work with, requiring intensive work and expertise to culture them correctly and make them turn into heart cells which is the next step. Then these heart cells derived from stem cells will be put into patches and their effect when transplanted to the surface of the heart will be tested.

Dr Roche is working to significantly advance the field of cardiac tissue bioengineering. This project is at the forefront of research in this subject area globally and is, ultimately, bringing us closer to being able to provide a paradigm shifting solution for heart failure patients.

To learn more about Dr Roche's work with Heart Research Australia in depth, you can read his recent articles in the European Journal of Cardiothoracic Surgery: (https://doi.org/10.1093/ejcts/ezaa093 and https://doi.org/10.1093/ejcts/ezaa205).

Dr Di Wu (Woody)

Woody is a qualified doctor who is on a pathway to fulfilling his dream of combining research with clinical practice. His passion and focus is to help discover cures for people with heart failure.

Working with Professor Gemma Figtree, Dr Belinda Di Bartolo, and Dr Kirsten Bubb, Woody has begun working on investigating a novel pathway that involves free radicals which cause damage to the heart – and results in the enlargement and scarring of the heart. Woody aims to discover whether this pathway can be targeted with new medicines in order to develop new and better treatments for heart failure.

The heart is a pump, moving the blood around our body.

The cells in our heart have their own mini-pumps which in heart failure, can be altered by toxic oxygen radicals. This alteration leads to scar tissue in the heart meaning the heart can not pump as effectively.

In his PhD, Woody has engineered a mouse that has a pump protected against free radicals using a technology that was awarded a Nobel prize this year. By protecting this pump Woody has found these mice do not develop scar tissue or heart failure.

Monica Ruckholdt

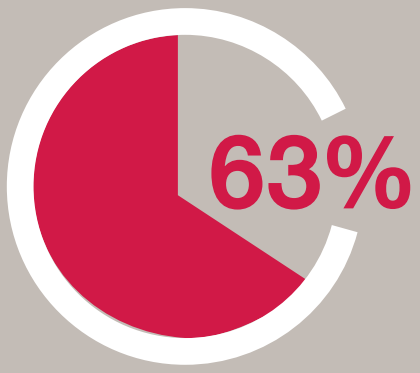
Monica is currently working on her PhD with The University of Sydney Susan Wakil School of Nursing and Midwifery, Faculty of Medicine and Health. She is supervised by Associate Professor Tom Buckley, Doctor Sue Randall, and Professor Geoffrey Tofler.

With over 9 million hospitalisations per year in Australia, the impact on the health and well-being of family members is a further risk. Researching the impact on partners, spouses and parents of patients hospitalised in cardiology and intensive care wards will identify psychological, behavioural and physiological predictors of cardiovascular risk, both during the hospital stay and following discharge. Identifying these changes and their modifiers will potentially explain risk and inform potential preventative strategies that can be translated into practice.

When a patient is hospitalised, it is often a stressful time for the patient's family members, with increased psychological morbidity including symptoms of anxiety and depression and post-traumatic stress symptoms during and following the hospitalisation experience, especially following unexpected admission with acute or critical illness. This psychological morbidity is likely to contribute to increased cardiovascular risk that has been reported in some family members of hospitalised patients.

Monica has found that family members of patients with acute admissions to cardiology and ICU demonstrate increased psychological measures of cardiovascular risk and behavioural changes including reduced sleep time. While most changes resolved by 3 months post discharge, increased anxiety symptoms persisted. Further study is required to understand the impact of these risk factor changes in relatives of hospitalised patients.

The next steps for the research project will be to undertake further analysis of collected data from the study. The aim is to understand the issues more accurately to put forward improved protocols and possible proactive treatments to reduce the adverse impact on family members.



of Australian **adults are obese** with **1 in 4 children** aged 5-17 classified as **overweight or obese**[2].

Heart Disease Kills 50 Australians every day[1].

1. 3303.0 - Causes of Death, Australia, 2018. Australian Bureau of Statistics.

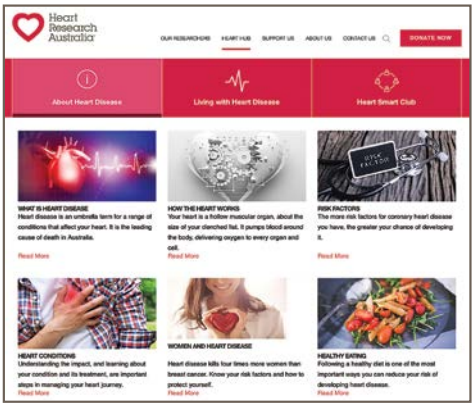
2. 4364.0.55.001 - National Health Survey: First Results, 2017-18. Australian Bureau of Statistics.

Keeping Hearts Beating

The Heart Hub

The Heart Hub, featured on our website, provides easy to understand information about heart disease, risk factors, and the different types of treatments, conditions and procedures available for those affected by heart disease. There are also personal stories where you can read others experiences with heart disease. Make sure you are signed up to our Heart Health Club for all the latest information on heart health.

Visit ***heartresearch.com.au/heart-hub*** for more info.



The Heart Health Club

At Heart Research Australia, in addition to funding life-saving heart research, we are also passionate about spreading heart health messages to ensure every Australian has access to the best resources and support. We are working with experts from varying fields, such as nutrition, mental health, cardiology and exercise physiology, to share relevant information to those at risk of, or suffering from heart disease to assist members in making and maintaining lifestyle changes to improve their heart health.

Heart Health Club Members receive access to exclusive offers and information, including:

- Access to quarterly free video content from specialists.
- Mental wellbeing guidance and strategies to support members through their heart health journey.
- Exclusive free webinars with our cardiologists and other health experts.
- Exercise tips and programmes from Accredited Exercise Physiologists.
- Heart healthy recipes.
- Quarterly E-Newsletters with lots of great heart healthy content, tips and advice from cardiologists and the latest research from our researchers.

A heart disease diagnosis can have a significant effect on yourself and your family in many ways whether it's socially, physically or emotionally. Heart disease can also be very lonely as one struggles to process what they have experienced. Connecting with others who have been through a similar situation can be helpful. As a part of our Heart Health Club, our members also get access to a private Facebook community group where heart patients and their carers can share support and advice. To join this Facebook group visit: https://www.facebook.com/groups/hearthealthclub

To join our FREE Heart Health Club simply visit www.heartresearch.com.au/heart-health-club/

Matters of the heart cardiac series

The Heart Research Australia team have produced a series of informational videos, with the aim of providing cardiac patients, their families and the wider community with information that may help support them or prepare them for their experience with heart disease. Topics in the series include: About Angiography, What is a Heart Attack, and The Importance of Cardiac Rehabilitation. Understanding the impact, and learning about your condition and its treatment, can be helpful in coming to terms with a heart disease diagnosis and any procedures that may be recommended.
The videos are available on our website and offered for use in doctor rooms and hospital TV channels.
To view the Matters of the Heart episodes, please visit ***heartresearch.com.au/video***

Heart Smart pocket guide

This year we distributed around 11,000 of our Heart Smart Pocket Guides to the wider community. This compact guide, which is designed to fit in your pocket or wallet, details the common symptoms and risk factors of a heart attack, as well as providing a heart attack action plan.

Sadly, too many people have lost a loved one to a heart attack simply because they were unaware of the symptoms, and often, in the absence of chest pain, they mistook the warning signs for heartburn, stress or another illness. This is where the guide can help people to be aware of heart attack symptoms and encourage them to seek help. No family should go through the tragedy of losing a loved one so unexpectedly to a heart attack, and we hope the pocket guide might play a small role in preventing such heartache. To order your free guide visit heartresearch.com.au/free-pocket-guide

Do you LIKE us?

Want to see all the latest updates from our researchers, events that are happening and heart health tips?

Make sure you like and follow our Facebook page to keep your heart health front of mind and stay on top of anything heart health related. We are also on Instagram, LinkedIn and Twitter.

Financials

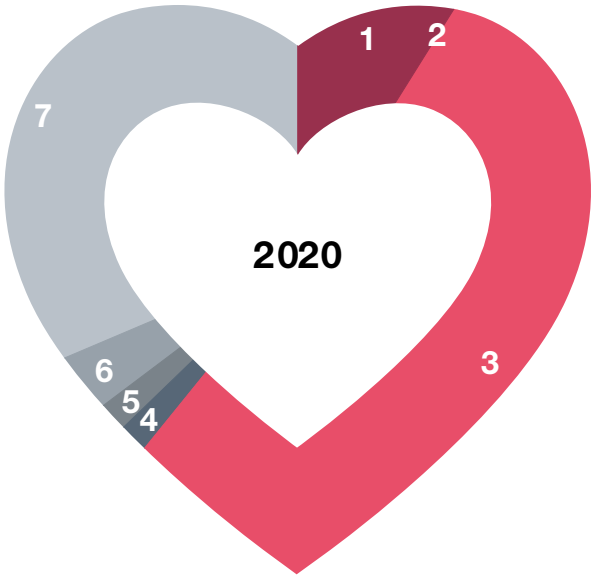
Heart Research Australia supports a centre of excellence that attracts world-class and emerging researchers to conduct ground breaking research into the prevention, diagnosis and treatment of heart disease.

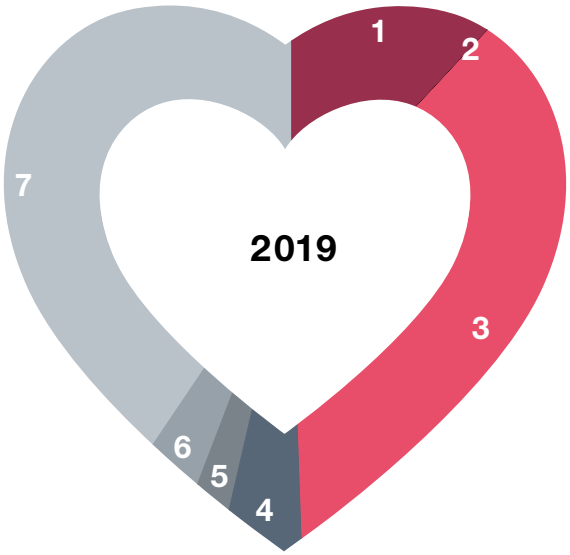
We are extremely proud of the contribution to research of over $32.6M we have made over the past 32 years towards combating Australia's leading killer and creating more heart survivors.

In an increasingly competitive environment to obtain research funding there is a greater need for Heart Research Australia to increase the amount of funds available for research. To enable this, we continue to invest some of the income received to acquire new donors and increase funds available for research. In FY18 the board approved a 5-year plan to invest 15% of current income to the acquisition of regular donors. At the end of year 2 the plan provided additional income of $301k. It is essential to invest in acquisition to ensure the long-term viability of the organization.

None of our achievements would be possible without the continuing generosity of our supporters, backed by the hard work of our community fundraisers, corporate supporters and Trust and Foundations.

How you have helped us over the part two years - Income





2020		*2019*
9.06%	1 Appeals	11.97%
0.25%	2 Raffles	0.06%
51.66%	3 Bequests	37.69%
1.98%	4 Corporate	3.94%
2.06%	5 Corporate in kind	2.43%
3.80%	6 Community	3.50%
31.20%	7 Other donations (Includes Merchandise)	40.40 %

Income	2020	2019
Fundraising activities	2,816,139	2,430,532
Appeals	255,243	290,843
Raffles	7,040	1,565
Bequests	1,454,720	916,142
Corporate	55,758	95,717
Corporate In Kind	57,875	59,075
Community	106,978	84,968
Other Donations	878,525	981,829
Merchandise	––	394
Non-operative activities	203,418	126,094
Total income	**3,019,557**	**2,556,626**

Expenses	2020	2019
Employee costs	687,524	739,362
Fundraising	458,444	458,210
Administration	317,784	150,928
Provision for Doubtful Debt	(425,000)	425,000
Corporate In Kind	57,875	59,075
Research support	960,479	960,479
Non-operative activities	172,316	——
Total expenses	**2,057,106**	**2,917,416**
Net surplus/(deficit)	**962,451**	**(360,790)**

Assets and Liabilities	2020	2019
Cash and cash equivalents	1,878,099	987,174
Trade and other receivables	684,179	90,009
Financial investments	630,889	1,157,858
Plant and equipment	13,191	16,138
Intangibles	11,285	23,218
Inventory for distribution	29,425	34,231
Total assets	**3,247,068**	**2,308,627**
Trade and other payables	609,090	649,833
Provisions	49,599	32,866
Total liabilities	**658,689**	**682,699**
Net Assets	**2,588,379**	**1,625,928**

Our Governance

Heart Research Australia is a company limited by guarantee. We are registered with the Australian Charities and Not-for-profits Commission (ACNC) and are authorised to fundraise in most Australian States and Territories. Heart Research Australia is approved by the Australian Tax Office as a health promotion charity and a deductible gift recipient.

Heart Research Australia is an organisational member of the Fundraising Institute of Australia (FIA) and abides by the FIA's Principles and Standards of Fundraising Practice.

Board of Directors

Heart Research Australia is governed by a Board of Directors. Members include cardiologists, academics, researchers and business leaders.

CHAIR

Anthony Crawford
BA, LLB, FAICD

Retired Solicitor
Company Director

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Professor Ravinay Bhindi
MBBS (USyd), MSc (Oxon), PhD (USyd), FRACP, FCSANZ, FESC

Professor, University of Sydney
Head, Department of Cardiology, Royal North Shore Hospital
Consultant and Interventional Cardiologist

Michael Lawrence
BEc, SF Fin, MAICD,
Harvard Executive Program

CEO, Customer Owned Banking Association

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Dr Rebecca Kozor
BSc (Med) MBBS PhD FRACP FCSANZ

Cardiologist, Royal North Shore Hospital & North Shore Private Hospital

Senior Lecturer,
Faculty of Medicine & Health, University of Sydney

Co-director, University of Sydney Cardiovascular Magnetic Resonance Group

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FAICD, BSC(Hons), MBA

Previously CEO National Heart Foundation of Australia (NSW)

Dr Michael Ward
MBBS (Hons), FRACP, PhD, DDU, FCSANZ

Consultant & Interventional Cardiologist

Committees of the board

The primary responsibility of the **FINANCE, AUDIT AND RISK COMMITTEE (FAC)** is to oversee the Foundation's financial management, corporate governance and compliance with statutory requirements to ensure the Foundation's long-term viability. Its duties include monitoring the performance of the Foundation's investment portfolio and oversight of the annual audit process.

The FAC also monitors the risk profile of the organisation and advises the Board on matters relating to the key risk areas of Revenue, Expenses, Research and Administration.

CHAIR

Michael Lawrence

MEMBERS

Tony Crawford

Dominic May

A/Prof Greg Nelson

Brigid Shute

Governance review

The Board Charter, adopted in September 2016, commits the Board to **"excellence in governance"**. To this end, a program of periodic review has been established to ensure all aspects of the Foundation's activities are consistent with best practice for the sector.

THE RESEARCH ADVISORY COMMITTEE (RAC) reviews applications made to Heart Research Australia for financial support, monitors the research activities funded by Heart Research Australia and makes recommendations and delivers reports to the Board of Directors on matters relating to the research objectives of Heart Research Australia. Members of the RAC are all highly qualified researchers and practitioners.

CHAIR

Dr Michael Ward

MEMBERS

Prof Ravi Bhindi,
Prof Levon Khachigian
Dr Rebecca Kozor

EXTERNAL MEMBER

Professor Carolyn Sue
Director, Kolling Institute, University of Sydney

The primary role of the **Scientific Advisory Committee (SAC)** is to advise the Board on future directions in research and the resources required to support future research initiatives.

CHAIR

A/Prof Greg Nelson

MEMBERS

Prof Ravi Bhindi
Prof Gemma Figtree,
Prof Levon Khachigian
Brigid Shute
Tony Thirlwell
Dr Michael Ward

Honours Board

Heart Research Australia supports world-class and emerging researchers to turn their innovative 'out of the notebook' ideas into reality. With the government not funding this type of first-stage research, Heart Research Australia relies on the community to help our researchers find major break-throughs in heart disease. We would like to recognise the incredible generosity of the following individuals and organisations who have contributed significantly to help keep families together for longer. Thank you, we are so grateful for your support.

Significant benefactors $50,000 and over

Chris & Julia Vonwiller
John & Sharon Conner

Significant benefactors $25,000 and over

June Dancis

Significant benefactors $10,000 and over

Anonymous (1)
Ian & Helen Bersten
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Richard Small
Kerrie & Con Dedes

Significant benefactors $5,000 and over

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Significant benefactors $1,000 - $5,000

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Tony McCormick
Vera Smith

Estate of the late

Beryl Elizabeth Raymer
David Kenneth Bell
George & Mary Thompson
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Harry Samuel McBurney
Iris Winifred Keep
Maureen Patricia White
Maurice Raoul Welstead
Ross William Lindsay
Thelma Rae Clarson
Zuza Dzidic

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Mill House Foundation
Skipper Jacobs Charitable Trust
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Northern Sydney Local Health District
Ormeggio Pty Ltd
Ramsay Health Care Ltd

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Australian Rugby Union (ARU)
Anna & Alessandro Pavoni from Ormeggio
Chris Russell AM
Community Heart Health Care
Red & White Committee:
- Lori Farrar
- Lynne Ravenhall
- Fiona Taylor
- Jenny Carr
- Lynn Varvel
- Jenny Goldring
- Con Dedes from the Dedes Group
- Northern Suburbs Rugby Club

Matt Shields
Cathy Licuanan
Brooke Williams

Heart Research Australia

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