

Can You Imagine a World Free of Breast Cancer?

In the world of science, a paper published in the journal *Nature*, the “Mount Everest” for researchers, is an incredible achievement.

For Dr Theresa Hickey, who recently accomplished just this, her greatest personal triumph is the ability to have a potential impact on the lives of women with breast cancer.

Thanks to you, supporting life-changing research through the RAH Research Fund, Dr Hickey is able to work towards combatting breast cancer, currently in the second year of a three year RAH Research Foundation Career Development Fellowship.

As the Head of Breast Cancer Research at the Dame Roma Mitchell Cancer Research Laboratories (DRMCRL), located within the Hanson Institute Building at the Royal Adelaide Hospital (RAH), Dr Hickey is leading research that is a potential game changer for breast cancer, working with a new drug

currently in several clinical trials. This work not only has the potential to lead to a new treatment for breast cancer patients, it could also eventually be used to prevent this heartbreaking disease.

Explaining the basic science of her research, Dr Hickey said “most breast cancers are driven by excess estrogen hormone activity and in women, androgen hormones oppose this estrogen action in the body.

“A good, simple example of this opposing sex hormone activity is that women develop breasts and men don’t. For women, estrogen dominates over androgen, so you get breast growth. In males it’s the opposite: androgen dominates over estrogen and breast tissue development is blocked. It is not the case that males have no estrogen and females have no androgen; it’s all a matter of balance.

“If that balance gets disturbed, breast tissue can develop in men, and while it’s rare for men to get breast cancer, it does happen. Most

male breast cancers are driven by estrogen, indicating that somehow their androgen hormones are not adequately suppressing estrogen action to inhibit growth.

“So this kind of hormone tug of war is happening all the time and one of the things that we’re doing is trying to find out what mechanisms are at play and whether we can develop therapeutic drugs that target the androgen receptors.”

“This work not only has the potential to lead to a new treatment for breast cancer patients, it could also eventually be used to prevent this heartbreaking disease.”

Current treatments for breast cancer work to eliminate estrogen in the body, which result in side effects negatively impacting a woman’s quality of life. One of Dr Hickey’s main areas of work is looking at inhibiting estrogen action in breast cancer, but in a more natural way than current therapies by ‘awakening’ their androgen receptors.

“We’re doing a lot of work now with a drug called Enobosarm that is showing really good results

- cont’d on p.2



Pictured Left: Dr Theresa Hickey (centre) with colleagues, Adrienne Hanson (left) and Rayzel Fernandes (right).

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in a clinical trial of women with metastatic breast cancer being conducted in the US. We're really quite excited about it as this drug doesn't have negative side effects so far and may even improve muscle and bone strength in postmenopausal women.

"The other trial that we are doing with this drug is called a Window of Opportunity trial, which we're doing in collaboration with Cambridge University, UK and a partner in Liverpool."

"It's considered unethical for a woman with breast cancer who has just had her surgery to go on a brand new drug, it is our duty to ensure they are given standard of care first. So the only way you can test a potential new treatment on its own is to test it in that window of time in between when a woman is diagnosed and her surgery date. So

this is something we're also working on, which is really exciting as the tissue from the trial will be coming here to our labs for us to analyse."

With a recently published paper in Nature, and another in Nature Genetics, Dr Hickey said her team's work is helping to lead toward a new way of thinking about the treatment of breast cancer.

"This is all quite a new paradigm way of thinking. If your estrogen receptor is behaving really badly in your breast, can we push it towards good behaviour?"

We want to keep the estrogen, because obviously the body wants to have it around, but can we push it away from that bad, cancer-promoting behaviour to a more benign type of activity?

This is what was discussed in the recent Nature paper we had

published and we're going to have a shot at getting another paper published in the same journal soon!"

For Dr Hickey, her work is all about impact.

"This is why I'm really excited about these clinical trials! To see some of your work actually enter into a trial, or form the basis for a new trial, that's amazing," she said.

"Personally I'm also excited about the prevention side of things. I think there is a real potential in what we're doing to eventually lead to a preventative therapy.

"We use hormones for contraception and all kinds of other things; can you imagine taking a pill at night to prevent breast cancer? It could happen!"

A Bright Future Ahead

We're delighted to officially introduce you to our new visual brand, representing our bright future ahead, all possible thanks to your generous support.

Last month we proudly unveiled this new visual brand to a group of our dedicated supporters at a Thank You Luncheon held on Thursday May 19 at Ayers House.

The new brand has been inspired by the double helix – a symbol of

life, humanity, unity and medical research. The collective vision was to have a brand that highlights the human element of the RAH which proudly includes the RAH Volunteers, RAH Newsagency and the new RAH Institute (incorporating the Hanson Institute, SA Pathology and the Centre for Cancer Biology).

This brand intends to be easily recognised; engage the community, and represent improved health, wellbeing and hope.



The new logo is vibrant; contemporary and colourful while being respectful of the rich heritage of the RAH. We hope the new brand will bring a smile to your face and those of our patients, staff, volunteers and the wider community.

We welcome feedback on our new look and feel and we would also love for you to visit our new website and find out more about what we do and why we do it!

Visit www.rahresearchfund.com.au. To get in touch with us, please call **(08) 8222 5281** or email **contactus@rahresearchfund.com.au**.



Pictured Above: We were delighted to announce our new visual brand to a group



Fast Fact:

The 2016 RAH Research Fund Medical Research Impact Grant Round was the first of its kind!

\$1million to Boost Research at the Royal Adelaide Hospital

We're so pleased to announce \$1million in funding for innovative research that supports patients, clinical services and develops and promotes research capability.

The 2016 Medical Research Impact Grant Round, made possible thanks to your generous donation, will provide funding to four leading researchers based at the Royal Adelaide Hospital (RAH):

- Professor Michael Brown, APOMAB: A New Way to Find Out Which Patients Benefit From Chemotherapy
- Professor Toby Coates, Pancreatic Islet Auto Transplantation for Chronic Pancreatitis
- Professor Robert Casson, Hyperspectral Imaging of the Retina: a Novel Technique for Detecting and Monitoring Eye Diseases
- Professor Paul Reynolds
 - o Project 1: Engineered Cell Therapy for Pulmonary Hypertension
 - o Project 2: Developing New Therapies for Lung Cancer

"We're most grateful for the ongoing support of our donors who have helped us to boost the RAH and its research capabilities, funding research that will have a direct impact on the lives of our community," said Karen

May, Senior Adviser for the RAH Research Fund.

"This Grant Round attracted over 50 applications with expressions of interest assessed by an independent panel and judged on scientific excellence, track record and also the translational nature of the project.

"The RAH has earned a fine reputation as an innovator and leader in medical research in Australia. The RAH Research Fund is very proud to play a vital role in supporting research that will help shape the delivery of better treatments and care in the areas of cancer, pancreatitis, eye disease and respiratory health.

"As with all researchers and projects funded, we expect the successful applicants to have a very positive impact on the future of research at the RAH with results that will translate into improved health and wellbeing for all South Australians."

We look forward to updating the community with the progress and clinical impact of these four research projects in the near future!

An Exciting New Partnership!

We are very excited to announce a new partnership with Quest on Franklin! The popular hotel has generously offered discounted accommodation for any patient or visitor of the RAH.

In support of continued research and patient care at the RAH, Quest will also be directing three percent of

every booking from a RAH patient or visitor to the RAH Research Fund.

We would like to extend a big thank you to Quest for their support!

If you would like more information please contact us on email at contactus@rahresearchfund.com.au or call (08) 8222 5281.





United They Trek for a Future Free of Cancer

Nothing is more powerful than a group of small people coming together with a common goal and we're so incredibly grateful to the hard work of our supporters Matthew Wright, Grant Evans and Kate Mitchell.



Pictured Above: The entire United We Trek Crew - what an amazing group of people!

This dedicated trio recently finished 14 days trekking across the Simpson Desert, to raise much needed funds for cancer research at the Royal Adelaide Hospital (RAH).

Kicking off their walk on June 6th in Dalhousie Springs in South Australia, Matthew, Grant and Kate walked 440 kilometres over 14 days to reach their final destination of Birdsville, Queensland. To date, the group has raised over \$36,000 for their amazing efforts, with donations still coming in.

Their motivation? Raising funds in memory of Christine Evans, their beloved mother and mother-in-law who sadly passed away from cancer at the RAH in November 2015. The three trekkers felt something needed to be done in the wake of her death to raise money for essential cancer research through the RAH Research Fund.

"We don't want any other families to go through what we have been through and we want a world free of cancer for my children's' generation," Matthew said.

"Six weeks before the trek I also lost my Grandfather to cancer. He was 92, so he had a good innings, but cancer is just such a horrible disease. We want to help find a cure."

With their feet riddled with blisters throughout the trek, Matthew, Grant and Kate were supported by a dedicated support crew who would pack down camp each morning, drive to set up for lunch, and then continue the drive to set up camp for the evening.

The support team included Christine's husband Philip, Matthew's wife Rebecca Wright and their three children, twins Hayden and Jackson (12) and Matilda (7) along with family friend Rod Lawrence.

"Each night we were in tents or swags in the desert. We even had dingos wandering in – it was a real Aussie experience!"

The reason the group chose to trek the Simpson Desert was because they knew that to get the backing

The United We Trek group would like to extend a very warm thank you to their dedicated sponsors:

- Downer EDI
- Marble Hill Spring Water
- Burson Auto Parts
- Action Line Marking
- Vinylised Signs
- Electric Bug
- TMH Safety
- Global Music Revolution
- RAA
- Cutting Edge Printing

they needed, their task needed to be a difficult one.

"Watching Christine go through cancer, we knew that was not easy, so we needed to make sure that what we chose to do to raise funds in her memory would really put us to the test," Matthew said.

"Coming in on the last day to the Birdsville Pub was an incredible feeling. It was quite emotional but we had a few people come out and cheer us on – our first stop when we finished was a beer at the front bar!"

We can't thank Matthew, Grant and Kate enough for their hard work and look forward to ensuring their raised funds are directed towards translational research that has a direct impact on the lives of others.

If you would like to make a donation in support of their efforts, please contact us on **(08) 8222 5281** or email contactus@rahresearchfund.com.au.





Kidney Research - It's Changing Lives

For young women and men living with kidney disease, the decision to start a family can be a difficult one. What are their risks if they do decide to have children, and when is the right time?

Made a reality thanks to you, Kidney Specialist Dr Shilpa Jesudason based at the Royal Adelaide Hospital (RAH) has set forth to answer these questions with the support of a RAH Research Fund Committee Grant.

"Kidney disease is often seen as a problem that affects older patients, and whilst it is, there is a significant portion of our patients who are young men and women," Dr Jesudason said.

"For those people at this stage of life who are looking forward to big life decisions, such as having children, they can feel limited because of their kidney disease. A lot of the work I am doing is trying to help these patients make these decisions, whether to have kids and when is the right time?"

Firstly, Dr Jesudason wanted to understand the experiences and emotions of women currently living with kidney disease and



"Most of the women said they found issues around motherhood very confronting."

kidney failure, dialysis or a kidney transplant. With her research collaborators, she undertook a study interviewing patients from the RAH and St George Hospital in Sydney.

"I really wanted to find out from these women what their experiences around pregnancy have been and what we can do as clinicians to improve their experiences and make it better for others. Most of the women said they found issues around motherhood very confronting. There was a lot of grief when they couldn't have children because of the risk to their health, and guilt from those who received a kidney from a donor who felt they were gambling with that very special gift."

Touched by the responses of these women Dr Jesudason and her team published a paper 'Perspectives on Pregnancy in Women with Chronic Kidney Disease: A Semistructured Interview Study'. Now, Dr Jesudason is developing an improved process of counselling, which she is now implementing in her monthly pregnancy counselling clinic.

"Whilst it's important we tell women about the risks associated with having a baby when you have kidney disease, we have to do it in a way that doesn't frighten and push them away from the clinical interaction. In this clinic I look after women with kidney disease who are already pregnant or who have developed kidney problems during their pregnancy.

"A lot of the work I do is also talking with women who have kidney disease and want to get pregnant.



Pictured Above: Dr Shilpa Jesudason is passionate about her work and so grateful for your support.

We've now developed a strategy for talking about the risks, taking into account what they are going through, their perspectives and the things we learned from the interview study in order to navigate shared decision making."

In addition, Dr Jesudason is preparing to launch a national study looking at kidney disease in pregnancy across 300 maternity hospitals in Australia.

"Nationwide, we are trying to find all women with significant kidney disease in pregnancy, those who need dialysis or who have had a kidney transplant in pregnancy. These are the highest risk patients that we want to identify and follow them and their babies through the pregnancy. This will help to develop a healthy policy around these particular cases deliver the best health care to these women."

Pursuing these studies has given Dr Jesudason and Kidney Specialists like her the opportunity to provide patients with the best possible health care as they navigate through their journey.

"It's a real privilege to be a part of these people's lives and see them through really difficult and turbulent times. Funding from the kind and generous supporters through the RAH Research Fund is crucial to help develop new studies which can ultimately become the backbone of innovative, new research programs."



“The RAH saved my life Four Times!”

For Pat Goodwin the Royal Adelaide Hospital (RAH) and the hardworking researchers supported by the RAH Research Fund hold a very special place in her heart, having saved her life on four separate occasions.

Despite suffering from crippling headaches throughout her life, it wasn't until her early 40's that Pat discovered she had been living with a brain aneurysm, a weakness in the connecting artery in her brain.

“In those days doctors couldn't explain what was wrong. They didn't have the technology to do so,” she said.

“One day when I was in my early 40's I felt like my head exploded, and then I went unconscious. Luckily the ambulance was close to my house and I made it to the RAH very quickly.”

At the time the RAH was one of few hospitals to have the newly developed CAT (computerised axial tomography) and CT (computerised tomography) scans that took data from X-ray images of Pat's brain and converted them to a picture on a monitor.

This advancement in technology enabled doctor's to confirm Pat had suffered a burst brain aneurysm, something she had been living with since birth.

“I was at the RAH for about a month, I had the burst aneurysm clipped.

“After that I went back to my life. It was very hard to get back to a full professional career but thanks to the wonderful people at the RAH I managed it,” Pat said.



Pictured Above: Pat Goodwin supports the RAH Research Fund to give back to the hospital that continues to save her life.

Moving to picturesque Kangaroo Island with her husband in 2009, Pat was at the gym when she suffered a sudden second burst aneurysm.

“It was nothing like the first one, but I knew what it was straight away.”

Travelling to the RAH with the Royal Flying Doctor Service, Pat saw firsthand the medical advancements which had occurred over the thirty years since her last visit.

“This time the burst aneurysm in my brain was coiled, last time it was clipped because they didn't have coils in those days.

“It was so much easier on me; I was out of hospital in 10 days. I owe that to medical research. But the RAH hadn't finished with me, and I hadn't finished with it.”

Only a year later Pat was diagnosed with colorectal cancer and found herself back at the RAH.

“I had a wonderful surgeon and team, I was only in hospital for two

weeks before I was back at home teaching yoga and doing everything I was doing beforehand,” Pat said.

“Then one day when I was about to go to the gym I got a pain all the way around my abdomen.

“After a week in the local hospital I was going downhill so they flew me to the RAH where again I had big surgery to fix a blockage.”

Not planning to return to the RAH any time soon, Pat now continues to support the RAH Research Fund to ensure medical advancements, like the ones she has benefited from, continue long into the future.

“When I saw in the newsletter you were looking for people to share their experiences with the RAH I thought it was the perfect opportunity for me to express my appreciation for all to hear.

“I now lead the world's most wonderful life and I enjoy every minute of it.

“I can't express my gratitude enough – I owe my life to the RAH and medical research.”



Investigating the safety of E-cigarettes on Your Health



Pictured Above: Dr Miranda Ween's research could help create a healthier community!

Thanks to your support, we're able to fund a variety of researchers working towards a common goal – the improved health and wellbeing of our community.

For Dr Miranda Ween, a researcher in the Lung Research Unit at the Royal Adelaide Hospital (RAH), her hope is to do just that, by investigating the effects of e-cigarettes on healthy lung cells.

“E-cigarette use is rising in Australia, with up to 13 per cent of the population having tried them. These users, or vapers, fall into two distinct groups, those who are using them socially, and those using them to quit smoking,” Dr Ween said.

This research hopes to inform users of any health risks associated with e-cigarette use as well as informing policy to ensure e-cigarettes and e-liquids are safe for use.

“E-cigarettes are widely advertised as a safe and harmless way to quit smoking, however up to 25 per cent of those aged between 18 and 25 who have tried e-cigarettes say they are vaping more for the novel, fun, and social factors – not as a quitting tool,” Dr Ween said.

“There is an astonishing lack of information regarding the safety of e-cigarettes and vaping and no laws or regulations in Australia that control what the e-cigarettes are made of or where the e-liquid ingredients come from. The e-liquids which are heated to produce the vapour also have no regulated quality control about which flavouring chemicals can be used, except that they cannot be sold in Australia if they contain nicotine, the addictive and toxic substance found in tobacco cigarettes.

“In fact, in South Australia, there is no age restriction for purchasing them and there are no rules about using them in public places, leaving it up to store and space owners to control this.

“We need to better understand the dangers of e-cigarettes as the more knowledge we have, the earlier regulations can be implemented to ensure that e-cigarettes are used in a safe manner and users are aware of any risks they may pose.”

Dr Ween hopes that by pursuing research into this area, her team will be able to help draw attention to any potential risks of e-cigarette use.

“Data is starting to emerge that

suggests that even non-nicotine e-liquids could be damaging healthy lungs and airways due to the heating of the flavouring chemicals and the chemicals they are diluted into – propylene glycol and vegetable glycerine” she said.

Dr Ween plans to examine what role vaping plays on the immune response in the lung using previously established scientific methods. She has already found that clearance of nasty bacteria which can cause pneumonia by specialised cells called macrophages is reduced when they are exposed to e-cigarette vapour. This result is similar to what she sees when the same cells are exposed to cigarette smoke.

“The results we find could be used to draw the public’s attention to the fact that e-cigarettes are not as harmless as their marketing campaigns would have you believe, especially if you are not a smoker.

“100 years ago, tobacco cigarettes were promoted as being safe to smoke and today we know they’re anything but that. We don’t want to see a repeat of this tragedy and that’s why this research project is extremely important to help users be aware of any risks from e-cigarette use.”

With further funding in the future, Dr Ween hopes that she will be able to continue to extend her research into this area. For now, Dr Ween is very grateful for the research funding she has received thanks to your kind support. She was also the recent winner of the prestigious National Asthma Council & Thoracic Society of Australia and New Zealand Career Development Fellowship which will allow her to investigate whether E-cigarettes pose any risks to asthmatics.

For more information on e-cigarettes, please visit: www.quit.org.au/resource-centre/policy-advocacy/policy/e-cigarettes1.



Become a RAH Superhero and Save Lives!

Do you work at the Royal Adelaide Hospital (RAH) or SA Pathology? We've made it easy for you to give back to your RAH Research Fund! By donating a nominated amount from your salary you are funding the research and equipment that continues to deliver the best care to the South Australian community.



Join the Workplace Giving Program

Workplace giving is one of the most cost effective ways you can donate regularly to the RAH Research Fund!

It's simple, your donations are made regularly from your pay – and each year you can claim these as a tax deduction.

Whilst the minimum donation is \$2, you can donate any amount that suits you!

Feel proud that with your fellow colleagues all donating small amounts you are uniting to make a big difference in the lives of patients you meet every day.

Do you want to be RAH Superhero? If you would like to donate regularly or sign up for the RAHSCALS lottery please email us at contactus@rahresearchfund.com.au or get in touch with us on the phone: (08) 8222 5281.

Try your luck in the RAHSCALS Lottery

Compete with your colleagues and sign yourself up for the Royal Adelaide Hospital Staff Charity and Lottery Scheme (RAHSCALS)!

Just by giving \$1 from your fortnightly pay, you could win \$100!

The lucky winner is drawn every fortnight at the RAH Research Fund.

The RAHSCALS lottery is not tax deductible, but it is a lot of fun and your contribution is making a difference in the lives of our community.

Celebratory Donations Received

Thank you to those who sent in donations to celebrate the following events:

Mothers Day gift for Maxine Burns
Mothers Day gift for Raelene Magor



We honour their memory

Donations were received between 6 February 2016 and 14 June 2016 in memory of the following people:

Stanley Maxwell Lowery
Jane Kent
Christopher Patrick Treadwell
Adam Lane
Lloyd & Dianne Hourigan
Brian Kevin Dobie
Donna Underhill

Elizabeth Ottelia Williams
Mary Aileen Phillips
Graham Neil Duncan
Darren Craig Graetz
Madalena Silvestri
Kevin Raymond Miller
Mary Helena Marrs
Allan Richard Tiller
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Angelo Megetto
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