

Under the microscope

NEWS FROM INSIDE THE INSTITUTE FOR OUR SUPPORTERS



WINTER EDITION 2016

State-of-the-art ProCan™ lab is nearing completion

A big thank you to our generous supporters who have helped us to raise more than \$200,000 to launch the world-first cancer research facility called ProCan. ProCan will change the way cancers are diagnosed and will allow doctors to determine more precisely the best cancer treatments for every individual child with cancer.

Thanks to the funds raised from our last appeal, we are getting ready to officially open this lab in September.

- Plant room – complete
- Nitrogen generator – purchased
- Mass spectrometers – four machines purchased and installed; two more due for installation in August
- Smaller equipment – purchased
- ProCan operating procedures – being set up and finalised.

All of us at CMRI are excited by the rapid progress on the ProCan lab and eagerly looking forward to its launch.





From the Director

Welcome, to the 2016 Winter Edition of "Under the Microscope".

CMRI held its inaugural Research Excellence Awards in February, with distinguished guests, The Honorable Pru Goward MP, NSW Minister for Medical Research, and Professor Tom Cech, Nobel Laureate in Chemistry. Established by philanthropist, Mr Xiangmo Huang, Chairman of CMRI Research Excellence Foundation, and generously funded by Zhiwei Group Pty Ltd and Chuang Xiu Investments, the awards recognised CMRI's most outstanding research in 2015.

Associate Professors Tracy Bryan and Robyn Jamieson won for excellence in genetic research that has had an impact on patients' lives, and Dr Tony Cesare, for best new idea: a rapid method for assessing telomere health, which has implications for cancer and other diseases.

At the same event, we proudly launched CMRI's Vector and Genome Engineering Facility where we are developing technologies to correct gene defects in children with serious genetic diseases.

Finally, with the ProCan lab nearing completion, we are excited about starting this transformative new project.

Your donations have been vital to our achieving these milestones – every step is one closer toward our goal of defeating childhood diseases.



Ian Potter Foundation
Thank you for the generous donation of \$100,000 to purchase equipment that will accelerate our cancer research.



Join us for your walking challenge: a 6 km, 18 km or 30 km walk, and take the first steps to beat childhood disease on Sunday 11th September, Parramatta Park.

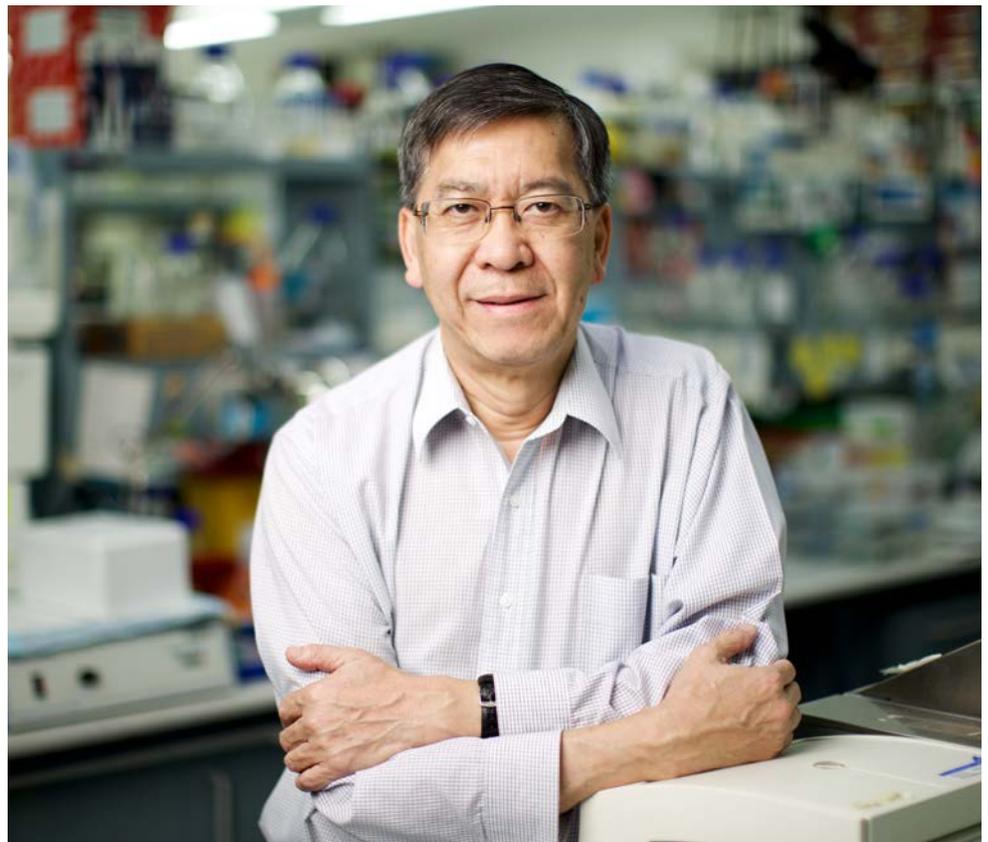
— ksforkidswalk.org.au



Research Update

Professor Patrick Tam's research looks at how cells in the early embryo differentiate with the goal to construct the blueprint of development.

A Lifetime's Work



Professor Patrick Tam's research, recently published in the prestigious international scientific journal *Developmental Cell*, was the culmination of his lifetime's work so far. During his early research training, Patrick began studying how cells in the early embryo morph into all the different types of cells in the body. His goal was to construct a "fate map" (a complete blueprint of embryonic development). Advances in genetics research have now made it possible for the project to be extended to discover the specific genetic information inside each group of embryonic cells that directs the behaviour of these cells and their fate during development.

This recent work is the result of a major collaboration between CMRI and two research teams (Cell Biology and Bioinformatics) at the Shanghai Institute of Biological Sciences of the Chinese Academy of Sciences. Their work examines the level of activity of more than 20,000 genes during the gastrulation process, a stage of early embryonic development that is crucial for setting up the body's architecture.

This collaboration will continue over the next two years to complete the analysis throughout gastrulation, at an individual cell level. The goal is to establish a highly detailed molecular understanding of this crucial early phase of embryonic development. Such knowledge will help us to understand and predict how certain genetic disorders and adverse environmental factors will impact on development before birth.

— Read more online at cmri.org.au/Research/Research-Units/Embryology



FIT 2016: More than \$62,000 was raised this May by people committing to FIT in their Jeans for Genes. If you want to get fit in 2016, stay tuned for another round of FIT - coming soon!

— fitinyourjeansforgenes.org.au



Jeans for Genes®

Registrations
now open

— jeansforgenes.org.au and register today.



Dr Scott Cohen studies telomerase, a factor important in almost 90% of all cancers. With the help of grants from the Ernest & Pirooska Major Foundation, managed by Perpetual, he's now taking his research to the next level.



Q & A

With Dr Scott Cohen

Q: Why do you study telomerase?

A: Most cancer cells rely on telomerase to keep growing, making it a prime target for anti-cancer treatments. There are no small-molecule inhibitors against telomerase in clinical trials, but there is a clear need for these drugs.

Q: How has Ernest & Pirooska Major Foundation helped?

A: The Foundation has contributed \$420,000 over 4 years, keeping this project afloat. Now, they have committed a

further \$240,000 for the next 3 years. This research is long term and high risk, but they understand its great potential. They have funded the structure work and now the small-molecule screening too, for which I am very grateful.

Q: What's next?

A: Just a few weeks ago we reached a significant milestone: we were able to observe individual telomerase molecules using a technique called Cryo-EM. So, after nine years, I'm much more confident now than just a few weeks ago of eventually solving telomerase's structure.

— Read more online at cmri.org.au/CohenQA



Excellence Ball

The 2016 Jeans for Genes Excellence Ball was held on Friday, 24th June, attended by close to 300 supporters.

Some of the night's highlights included the Institute's standout donors being recognised with awards, live and silent auctions, and Paralympian Ellie Cole, sharing her moving personal experience of childhood cancer which resulted in the loss of her right leg.

"The hardest thing I found with my cancer journey and being sick as a child was how my family were affected...it was really tough. To know that CMRI is doing work to put an end to that is really positive," Ellie said.

The Excellence Ball raised \$400,000 for research at CMRI.

— Read more online at cmri.org.au/Events/Excellence-Ball



Committee & Community news

Becroft Bowling Club

Becroft – held a lunch and concert event on Sunday, 24th July. It was a delightful way to spend a Sunday afternoon.

Judith Hyam Trust – held their annual Christmas in July weekend in the Blue Mountains at the Heritage Carrington Hotel on 23rd – 24th July.

Maroota Committee – is supporting Jeans for Genes day on Friday, 5th August.

Port Hacking Committee – will be holding their Annual Charity Golf day on Monday, 8th August at 11.30am.

Maroota Muster – come and enjoy all the fun of a country fair with homemade craft on Sunday, 21st August at 10am.

Strathfield Committee Gala Dinner – an ideal opportunity for an enjoyable evening of dining and dancing. Saturday, 17th September at 7pm.

Hills Committee Jeans for Genes race day – Rosehill Race course, Saturday, 24th September at 11.30am.



— Contact info@cmri.org.au for more information on upcoming events



GameChanger

Become a GameChanger and help save children's lives.

When Sir Lorimer Dods helped establish CMRI in 1958, he was determined to make a real, tangible difference to the lives of sick Australian children. He was our original GameChanger.

Today, the scale of research being undertaken at CMRI is truly remarkable. A number of our discoveries have become standard medical practice around the world.

We are working towards finding new ways to prevent, treat or cure serious genetic diseases, birth defects and cancer. To achieve this our research uses the world's most advanced equipment and we recruit specialists in leading technological fields such as gene editing and bioinformatics.

This requires significant financial resources and forward planning.

When you become a GameChanger, you become part of the team that keeps CMRI moving forward. Your regular monthly donation is an essential ingredient in creating a brighter future for children in Australia.

Next steps.

Becoming a GameChanger is easy. Simply [click here](#) to complete the donation form online. Once we receive your form, we will set up your monthly gift and confirm this in writing. Alternatively, you may contact us on 1800 436 437 and we will help you become a GameChanger over the phone.

Why we need your support.

To make major advances, a long-term view is imperative. Ours are not results generated after a short investigation, but are the outcome of a continuous series of studies conducted over many years, which are the foundation of tomorrow's treatments and cures.

While our researchers do receive some government funding, typically each grant runs for three years, which can limit the ability to pursue longer-term studies. Ongoing financial support from our GameChangers provides CMRI's scientists with greater continuity to follow new ideas and avenues of research, in the hope of making exciting discoveries sooner.

How regular giving works.

Each month an agreed amount is automatically deducted from your credit card or bank account. You decide how much to give, and you can increase, decrease or even cancel your payment at any time.

As a GameChanger you will receive:

- Regular updates that tell you how your support is helping our researchers
- The opportunity to attend one of our Discovery Days and see first-hand how researchers are investigating the causes of childhood diseases
- An annual statement of your contributions, issued at each financial year-end for taxation purposes.