



Dr Morag Young
and PhD student,
Dr Jun Yang

Prince Henry's Institute
Newsletter | Autumn 2011

news

Research goes to the heart

Progress in our understanding of hormone-related mechanisms in heart disease and hypertension

PHI has made further strong progress towards a better understanding of the hormone-related mechanisms involved in heart disease and hypertension – and, importantly, the development of clinical applications that assist people living with these conditions.

Recent research funding success means we are expanding our investigations into the role that steroid hormones play in the development of cardiovascular disease.

In the latest round of National Health and Medical Research Council (NHMRC) grants Professor Peter Fuller, Dr Morag Young and Dr Amanda Rickard have secured funding of more than \$1.7 million for further work on aldosterone and mineralocorticoid receptors.

Peter's current focus in the cardiovascular area is on the mechanism of action of the adrenal steroid hormone aldosterone. Morag's team is studying the function of the mineralocorticoid receptor (MR) in cardiac failure and hypertension (high blood pressure).

Both Morag and Amanda are working towards determining the specific cell types in the heart through which MR influences heart failure. They aim to exploit the characteristics of these cells to develop drugs that act on the heart without the unpleasant side-effects

associated with drugs currently available that block MR activity.

In 2010, a paper by Amanda, Morag and their colleagues was judged the top basic science paper of the previous year by Hypertension, the prestigious journal of the American Heart Association.

Building on their previous work, the paper reported the findings of a study of the impact of macrophage mineralocorticoid receptors (MR) combined with high salt intake on cardiac fibrosis. Clinical treatments that reduce MR activity are known to improve outcomes for patients with congestive heart failure or hypertension.

Described in a Hypertension editorial as elegant and important, the Rickard study found that inflammatory cells (macrophages) play a central role in both hypertension and cardiac fibrosis. They used a unique transgenic mouse model to demonstrate the importance of the MR in macrophage function.

The editorial concluded that "the study by Rickard *et al.* has the potential to change the way we look at macrophage infiltration. It also presents another reason why MR antagonists remain important therapeutic agents. It is amazing to consider the meteoric rise in interest in this once-forgotten hormone and its receptor." □

Research s'il vous plait



Dr Amanda Rickard's research into aldosteronism and cardiovascular disease has received a boost with an overseas biomedical INSERM - NHMRC training fellowship.

For the next two years, Amanda will be based at the Paris Cardiovascular Research Centre at Hôpital Européen Georges-Pompidou where she will have access to the centre's unique tissue bank. "I will be broadening my focus from aldosterone-mediated heart failure, to understanding the genetic mechanisms of primary

aldosteronism," Amanda said. "My host laboratory is also affiliated with three hospital departments. I'll be able to gain first-hand experience in interactions between clinical and basic research, which I'll draw upon when I return to Australia."

Amanda joins another PHI researcher, Dr Yoyesh Makanji in taking up a four-year CJ Martin Fellowship in 2011. These sought-after overseas training opportunities are offered by the NHMRC to people of outstanding ability who wish to make biomedical research their career. □

Message from the Director



2011 is poised to be another positive year for Prince Henry's Institute. We are energised by our recent 50 year celebrations and the expansion of our research fields in cardiovascular disease, cancer, and men's and women's health and fertility.

Recently, PHI captured more than \$8.2 million in competitive research funding, with a high success rate from NHMRC project grant applications of 57%, compared with the national average of 23%. This outstanding result is a testament to the ability of both our early career and established researchers to deliver ongoing high quality research outputs.

Prince Henry's Institute is fortunate to have a number of exceptional teams led by some outstanding individuals. Congratulations to the NHMRC grant recipients, Senior Principal Research Fellows, Career Development Awardees and overseas Training Fellowship recipients. My thanks also goes to PHI staff who contributed to this impressive achievement.

The NHMRC funding however, covers only direct project costs and is complemented

by infrastructure allocations from the NHMRC and Victorian Government. This means we continue to seek additional sources of funding to build a thriving research culture and innovative technology platforms which are so necessary to boost productivity and attract talented researchers.

Attracting additional funding to support our research programs is an ongoing challenge and we gratefully acknowledge our generous donors and sponsors, without whom we could not continue to operate.

As an independent, accredited medical research institute, partnerships offer a means to contribute to a shared culture of excellence and learning. Recently, PHI, Monash University, Southern Health, Alfred Health, Cabrini Health and Peninsula Health established the Monash Comprehensive Cancer Consortium. The consortium will be one of the three major cancer nodes in Victoria's integrated system of cancer research and care.

At a time when Australians are realising the economic, social and personal cost of this summer's extra-ordinary weather events and their impact in Queensland, Victoria and NSW, our hearts go out to those affected and we wish them a speedy recovery.

Community recovery, like medical research, is a team effort where individuals combine their abilities and work together to achieve the team's goals. We applaud both the individual contributions and the team achievements – and we know each depends on the other.

Professor Matthew Gillespie
Director, PHI

Award scheme winners announced



L - R: PhD students Rajini Sreenivasan, Jenna Haverfield and Justin Chen.

The three recipients of this year's Graduate Excellence Awards are exploring the boundaries of knowledge in areas as diverse as male fertility, advanced cancer treatments and disorders of sex development.

The 2011 recipients are **Justin Chen, Jenna Haverfield and Rajini Sreenivasan.**

Justin Chen is the beneficiary of an award sponsored by Smart Salary. The employer services provider is the first business to come on board the scheme. Justin is researching the causes of cachexia, a debilitating condition which results in bone loss and muscle wasting. Cachexia affects up to 80% of patients with advanced cancers.

"TGFbeta ligands are often over-expressed in cancer and may cause cachexia," Justin reports.

"We hope to reverse muscle wasting and prolong survival for cachexia patients, which will improve their quality of life."

The annual awards were first offered by PHI in 2010 to provide practical support for early career researchers.

Due to the demands of research and study, many full-time PhD students can't take on a part-time job to augment their PhD scholarship.

"In the long run, the awards enable us to put our full efforts into our research," Justin said.

Each award winner receives \$15,000 over 3 years, and there are now five researchers in the program. Enquiries for sponsorship are welcome.

For further information contact the Marketing Manager on (03) 9594 4372.

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Professor John Funder AO

A leader recognised

Pre-eminent Australian research scientist and PHI Senior Fellow, Professor John Funder AO has been recognised by his peers for his exceptional leadership and innovative approach to making health and medical research a higher national priority.

John was presented with the 2010 Pfizer Australia Leadership and Innovation Award in November by Research Australia for his major scientific contributions and his very substantial contributions to research governance, representation, ethics, funding and translation nationally and internationally.

Congratulations, John from all at PHI.

A True Professional

In an age where words can undergo rapid changes in meaning, what does it mean to be

a member of a profession such as medicine, and what ethical responsibilities does membership of this profession entail?

Writing last year in *Clinical Medicine*, PHI's Professor John Funder AO put forward the view that the basis of professional ethics in medicine is that the knowledge-based power of the profession means power over disorders of the body rather than over people. For members of the medical profession to ask themselves whether they are exercising power over disorders or over people is "the spell check of professional ethics on a day-to-day basis".

There are other responsibilities too, including the need to "transmit and expand the knowledge base, by teaching and research, [to] ensure the future of a profession".

And finally, John concludes from the etymology of the word 'profession', which derives from a Greek word meaning 'to



"Those who transmit and expand the knowledge base, by teaching and research, ensure the future of a profession."

speaking out', that: "The ultimate responsibility of a professional is to be prophetic: to speak out, to address the disorder around us, and to get it right." □

Unique collection expands

Over 600 women have now participated in a unique ovarian cancer research program by making a simple tissue donation. PHI researchers in Melbourne have been collecting and analysing the tissue for the future development of an early stage ovarian cancer screening test.

The collection program takes just a few minutes of a woman's time during a short appointment to provide a plasma and urine sample. Recently our research team expanded the program to include healthy women.

The Ovarian Cancer Research Foundation arranges the tissue collection service in Sydney based on our collection model, and soon it will expand to Brisbane.

Our goal is to analyse over 1500 samples, which will permit statistically-significant testing of candidate proteins as clinical markers for ovarian cancer.



Nicole Fairweather, OCRF Senior Research Nurse, coordinates the ovarian cancer clinical collection program at Prince Henry's Institute.

We encourage all women to participate, especially those who may be post-menopausal. Visit www.princehenrys.org/clinical-studies for more information. □

NHMRC grant success

Prince Henry's Institute researchers have been awarded more than \$8.2 million in recent competitive research funding. Of this, over \$6.6 million was awarded in the latest round of National Health and Medical Research Council funding grants for research projects, fellowships, career development and overseas training.

The research projects will expand our understanding of the underlying causes of infertility in men, investigate the linkage between obesity and breast cancer, lead to new treatments for heart disease and protecting against heart disease and

hypertension, unravel the genes involved in determining healthy egg production in the ovaries, and identify new treatments for liver disease and prevention of fibrosis in numerous tissues.

Congratulations to PHI researchers, and their collaborators:

Peter Fuller and Morag Young
Stefan Bagheri-Fam and Anthony Argentaro
Kristy Brown and Evan Simpson, with Stephen Fox (Peter MacCallum Cancer Centre)
Craig Harrison and Kate Loveland (Monash University)
Karla Hutt
Peter Stanton and Craig Harrison
Morag Young and Peter Fuller

Prestigious NHMRC Senior Principal Research Fellowships were awarded to **Peter Fuller** and **Lois Salamonsen**. As a physician scientist, Peter translates his research into clinical practice and mentors the next generation of physician scientists. Lois' impressive body of work continues to provide new insights into women's reproductive health.

In addition to their successful project grants, **Kristy Brown** and **Craig Harrison** were awarded highly competitive Career Development Awards, and overseas training fellowships were awarded to **Yogesh Makanji** and **Amanda Rickard**. □

Philanthropy supports early research



PHI researchers, Dr Maree Bilandzic, Dr Ellen Menkhorst and Dr Mai Sarraj said 'thank you' for their travel grants to Dr Hugh Collins, Daniel Rechtman, Robert Read and David Abraham at a CASS Foundation researcher reception.

Increasing cancer research capacity

PHI and precinct partner, Monash Institute of Medical Research have eagerly sought to add to our sequencing capabilities of cancer samples and this will be realised in 2011.

Following a \$1.6 million equipment allocation from the Australian Cancer

Research Foundation we are establishing the ACRF Centre for Cancer Genomic Medicine. The Centre will be equipped with the latest DNA sequencing technologies and will facilitate research into cancer development and progression as well as speeding up the translation of laboratory findings into better outcomes for cancer patients.

Articles mentioned in this newsletter:

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- Smart Salary
- VicSuper



Your gift, whatever the size, is vital to research into cancer, osteoporosis and bone health, cardiovascular disease, men's and women's health, and more.

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