

# Media Release

The Hon Jill Hennessy MP  
Minister for Health  
Minister for Ambulance Services



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Making Things Fair.

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## TOP HONOURS FOR VICTORIA'S RISING MEDICAL RESEARCHERS

Five of Victoria's most talented health and medical researchers have received top honours for their pioneering breakthroughs that are improving care and changing lives.

Minister for Health Jill Hennessy last night presented the prestigious 2018 Premier's Awards for Health and Medical Research at Deakin Edge.

The awards honour the outstanding work and discoveries of up-and-coming health and medical researchers in the early stages of their career, and continue to affirm Victoria's reputation as a world leader in health and medical research.

This year, the Awards – in their 24<sup>th</sup> year – have expanded to include categories in the areas of basic science, clinical, public health and health services research.

Kerryn Moore, the winner of the Excellence Award 2018, was recognised for her research into the impact of malaria in pregnancy on birth outcomes in Asia.

This research is making a real difference across the globe - influencing World Health Organisation guidelines on the treatment, control and prevention of malaria in pregnancy in Asia.

Ms Moore, who also won the Public Health Award, is now working for the Monash Children's Research Institute based in Laos at the Lao-Oxford-Mahosot Hospital-Wellcome Trust Research Unit.

Also winning awards were Dr Hui-Fern Koay, Dr Tan Nguyen, Dr Benjamin Teh and Dr Gabrielle Haeusler.

The Andrews Labor Government's *Healthier Lives, Stronger Economy: Victoria's Health and Medical Research Strategy 2016-2020* outlines key priorities over four years to support new and evolving fields of medical research.

The strategy has delivered an additional \$20 million to ensure Victoria stays a world leader in ground-breaking health and medical research.

For more information on all finalists and award winners visit <https://health.vic.gov.au/about/clinical-trials-and-research/premiers-award>.

### Quotes attributable to Minister for Health Jill Hennessy

*"Victoria is home to some of the world's brightest medical minds, and we're leading the way in breakthrough discoveries to fast-track new treatments, and save the lives of more people in Victoria and around the world."*

*"Winners of this prestigious award like Kerryn Moore are now advancing their careers on the world stage, revolutionising patient care and saving lives, here and around the globe."*

### Quote attributable to Parliamentary Secretary for Medical Research Frank McGuire

*"Our major investments will build on Victoria's reputation as a world leader in medical research, attracting global investment and creating new jobs."*

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## **Research abstracts of category winners of the 2018 Premier's Awards for Health and Medical Research**

### **Ms Kerryn Moore - Public Health Award Winner - The impact of malaria in pregnancy on birth outcomes in Asia**

Each year, 125 million women are at risk of malaria in pregnancy which increases the risk of adverse pregnancy outcomes. The most effective antimalarials available are not recommended in first trimester.

Moore analysed data collected from antenatal clinics in refugee camps and migrant communities on the Thai-Myanmar border.

Her research found no evidence that first-trimester antimalarial treatment increased the risk of miscarriage or congenital malformations compared to the treatment currently recommended by the World Health Organization.

However, it found that malaria in pregnancy causes harm to the foetus, regardless of if and when during pregnancy it is treated.

The research influenced World Health Organization guidelines on the treatment of first-trimester malaria and on context-appropriate strategies for control and prevention of malaria in pregnancy in Asia.

### **Dr Hui-Fern Koay - Basic Science Award Winner (Joint) - How our Mucosal Associated Invariant T (MAIT) cells develop**

White blood T lymphocytes cells are critical for the protection against microbial infections.

Mucosal-associated invariant T (MAIT) cells are a major subset of T cells that play a key role in responding to microbial pathogens and low MAIT cells are associated with impaired immune responses.

The work carried out in Koay's PhD aimed to understand how MAIT cells develop within the immune system and why they expand to become the most abundant antigen specific T cell population in the human immune system.

Koay's key findings include the identification of novel MAIT cell populations in humans and mice, how they undergo a unique three-stage pathway of development and the identification of factors that influence MAIT cell expansion in the immune system.

Koay's work demonstrates that MAIT cells have the ability to rapidly produce large amounts of immunoregulatory factors and because of this, these cells represent attractive therapeutic targets that can be exploited for immunotherapy.

Ultimately, it is envisioned that these early studies will be adapted to treat a wide variety of human diseases such as cancer and infection in the future.

### **Dr Tan Nguyen - Basic Science Award Winner (Joint) - Love thy neighbour: how uninfected cells help combat viral infection**

Double-stranded RNA (dsRNA) is produced by viruses during infection, and the detection of these molecules alert the immune system to clear the virus from the body.

However, viruses have evolved exquisite and highly effective strategies to suppress the immune system (e.g. by hiding their dsRNA inside an infected cell and interfering with the activation of an antiviral response).

There has been speculation that the release of viral dsRNA from infected cells into uninfected cells helps the immune system circumvent this viral suppression but how exactly this occurred was unknown.

Nguyen's research discovered that a protein called SIDT2 was the 'missing link' needed to shuttle viral dsRNA released from infected cells into uninfected "neighbour cells" for detection, allowing the immune system to mount a full antiviral response.

Notably, in the absence of SIDT2, Nguyen observed that viruses were able to spread more readily and were more lethal.

This research provides further insight into the on-going evolutionary arms-race between viruses and humans and ultimately may help the design of better anti-viral therapies for patients.

### **Dr Benjamin Teh - Clinical Research Award - Improving the care of infections in patients with blood cancer multiple myeloma treated with new generation therapies**

Infections are a leading cause of morbidity and mortality in patients with myeloma (MM) cancer.

Patterns and risk factors for serious infections remain undefined despite increasing use of new generation anti-myeloma drugs. Assessing the risk for infection is also becoming more challenging as these drugs have wide effects on the immune system.

The research aims were to address gaps in knowledge about infection pattern and risk factors for a range of serious infections and to improve infection care by trialling the use of immune profiling to predict future risk for infection.

The findings have advanced knowledge of infections in patients with MM, contributed significantly to the scientific literature in this field and by helping to predict and prevent infections, changed clinical practice.

**Dr Gabrielle Haeusler - Health Services Researcher - Health Services Award - Improving the quality of research and the delivery of care for one of the most common complications of cancer treatment in children**

Fever and low white-cell-count (known as febrile neutropenia or FN) is the most common complication of childhood cancer treatment.

In Australia, hospitals do not have low-risk FN programs which would enable children at low risk of infection to be safely managed at home, improving quality of life and reducing healthcare costs.

Dr Haeusler's PhD aimed to:

- standardise the way paediatric FN research is conducted across the world
- understand how FN in children is managed in Australia
- test how children with low-risk FN can be better identified in Victoria.

As a result international experts agreed on a list of core research outcomes and definitions to standardise FN research and ensure relevant results for medical staff and patients across the globe.

Research results are being implemented at Melbourne's Royal Children's Hospital to reduce hospital admissions by up to 4 days in children with low-risk FN, and informed the NHMRC-funded Predicting Infectious Complications in Children with Cancer (PICNICC) project, linking eight paediatric cancer hospitals, ensuring all children with cancer across Australia benefit from these findings.