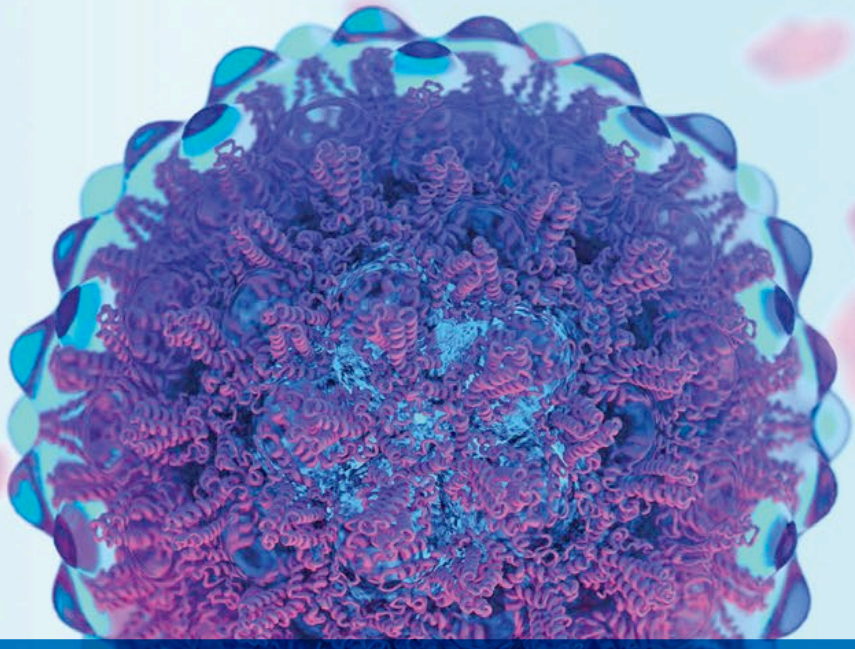
The Peter Doherty Institute
for Infection and Immunity



Developing the next generation of infection and immunity leaders

“Nobody can decide to discover something, but there are ways of making a discovery more likely.”

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Laureate Professor Peter Doherty AC

Infectious diseases know no borders

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We have teams of brilliant scientists, clinicians and public health experts approaching some of the greatest health challenges of our time. Real advances, however, depend upon engagement and leadership from beyond the scientific community. Delivering on the promise of the Doherty Institute requires an unprecedented level of commitment across sectors and borders alike. We invite you to join us.

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Professor Sharon Lewin,
Director, Doherty Institute

With the global movement of people, livestock and produce, the ability of pathogens to spread across continents and between species is unparalleled.

The risk of an outbreak of a new infectious disease drastically outweighs the world's limited capacity to respond effectively.

Infections are tackled and controlled by our immune system. Understanding the fundamental process of how our immune system works is the key to developing new vaccines and treatments for infections and other diseases such as cancer.

How can we solve this?

Finding solutions to prevent, treat and cure infectious diseases and understanding the complexities of microbes and the immune system requires innovative approaches and concentrated effort.

This is why The University of Melbourne – a world leader in education, teaching and research excellence – and The Royal Melbourne Hospital – an internationally renowned institution providing outstanding care, research and learning – have partnered to create the Doherty Institute; a centre of excellence where leading scientists and clinicians collaborate to improve health globally.

Over 400 million** people are affected by **viral hepatitis globally. Northern Australia's Indigenous population is disproportionately affected.

Over the coming years, the Doherty Institute seeks to engage a group of supporters and friends who care about our work as much as we do, who will advocate on our behalf, network and advise us, extend our reach, build our capacity and invest philanthropically in the great challenges of infectious diseases.

With your support, the team of infection and immunity experts can safeguard the future health of our children and grandchildren.

Our Brilliant Minds

The Doherty Institute is tackling the most significant health challenges of our time.

Our ambitions are significant.

With your help we can deliver results that will improve the health and well being of us all.

Please join us.

"Infectious diseases such as golden staph, skin sores, influenza, and viral hepatitis are more than five times higher, and with more severe complications, in Australian Indigenous populations compared to non-Indigenous populations. Our work seeks to prevent and treat these infections through strong links with communities, working with public health physicians and healthcare workers in the field, and applying cutting-edge research techniques."

Associate Professor Steven Tong,
Royal Melbourne Hospital Clinician Researcher

"Our research focuses on public health and rapid diagnosis of viral infection in a world of new and emerging infectious diseases such as coronaviruses and Zika. We need to detect new pathogens quickly to limit their spread or harm to humans. I want a future that can respond and adapt quickly to diagnostic needs of doctors and public health experts on the frontline."

Dr Julian Druce, Royal Melbourne Hospital
Head of Virus Identification Laboratory

"Despite the great successes in antiviral treatment for HIV, treatment is lifelong and there is no cure. In order to alleviate this significant economic burden on society, our research focuses on determining how HIV persists within the body, evading both antiviral drugs and the immune system. With improved knowledge we can design and implement strategies to eradicate HIV from infected individuals, and reach our goal of a global and accessible HIV cure."

Dr Michael Roche, University of Melbourne NHMRC
Postdoctoral Researcher, Lewin-Cameron Laboratory

"The catastrophic impact of the Zika virus on the unborn fetus in pregnant women demands novel, disruptive technologies to prevent disease transmission. We are developing vaccine candidates and mosquito control technologies that can stop the Zika virus and the related mosquito-borne viruses, dengue and chikungunya."

University of Melbourne Professor Cameron Simmons, Laboratory Head and Chief Investigator, Eliminate Dengue Program

"Newly emerging influenza viruses spread rapidly around the globe, causing life-threatening disease in humans, which can lead to millions of deaths as exemplified by the catastrophic Spanish Influenza. Our research dissects immunity to novel influenza viruses so we can design a universal, one-shot vaccine for life. Our focus is to protect everyone, and especially those who are at risk of acute viral pneumonia, including children, the elderly, pregnant women and Indigenous populations."

University of Melbourne Associate Professor Katherine Kedzierska, Head of T Cell Immunity Laboratory

"Antibiotics are a precious resource. As clinicians, we are already facing the awful reality of watching people die from infections for which we have no effective antibiotics. Antimicrobial resistance in common pathogens is a critical threat to public health globally and we must act now to ensure our children have access to the standards of healthcare that we enjoy today."

Associate Professor Kirsty Buising, Royal Melbourne Hospital Infectious Diseases Physician

"Tuberculosis and other killer diseases caused by bacteria are on the rise. We have developed technology to precisely map the genetic tricks bacteria use to evade our best antibiotics and spread through our communities. With this exciting and innovative science, we are entering a new era in microbiology where we have the power to design smart vaccines or use antibiotics more effectively and thus effectively fight the rise of these terrible infectious agents."

University of Melbourne Professor Tim Stinear, Laboratory Head and Scientific Director of Doherty Applied Microbial Genomics

"Over recent years, immunotherapies – treatments which harness the power of immune cells, such as T cells, to fight diseases like cancer – have been making great progress and headlines around the world. However, we cannot optimise immunotherapy until we fully understand all the components that make up our immune system. We focus on immune T cell types that have great immunotherapeutic potential yet are poorly understood, including how they develop, and what role they play in the immune system."

Hui-Fern Koay, University of Melbourne PhD student, Godfrey Laboratory

The Doherty Institute is committed to:

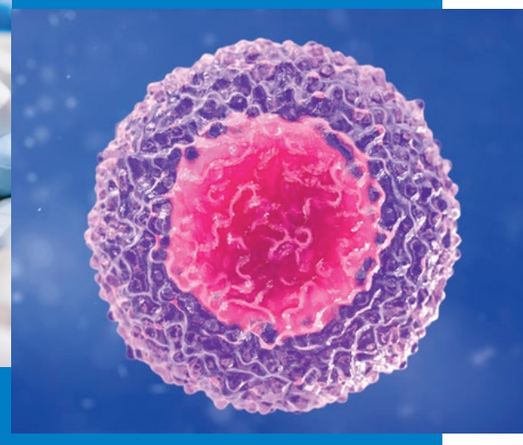
1 | Developing new ways to detect, treat and prevent new and re-emerging infectious diseases including Zika, Ebola, dengue and new strains of influenza.

2 | Combatting the disproportionately high rate of preventable infectious disease transmission amongst Australia's Indigenous population.

3 | Developing new ways to prevent, treat and cure chronic infections such as HIV, tuberculosis and viral hepatitis.

4 | Tracking and preparing for the increasing threat of antibiotic resistant superbugs.

5 | Advancing the field of immunotherapy to harness the immune system to fight disease.



Our Patron Laureate Professor Peter Doherty AC

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University of Melbourne Laureate Professor Peter Doherty AC was awarded the Nobel Prize for Physiology or Medicine with Swiss colleague, Rolf Zinkernagel, in 1996 for their discovery of how the immune system recognises virus-infected cells.

As the Patron and namesake of the Doherty Institute, Professor Doherty has been an international leader in infection and immunity research for over 50 years. Originally a vet, Professor Doherty attributes his scientific success to thinking unconventionally, accepting nothing at face value, working hard, working smart, a love of complexity and delight in the unexpected – these are the qualities that we embrace and foster at the Doherty Institute.

Source of statistics

UNAIDS AIDS Info 2014

World Health Organization

UK Review on Antimicrobial Resistance 2014

“From HIV to Ebola, to pandemic influenza, to mosquito-borne infections like dengue and Ross River virus, to antibiotic resistant bacteria (and the list goes on), infectious diseases represent continuing threats that humanity is only partly equipped to counter.”

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Laureate Professor Peter Doherty AC

The Royal
Melbourne
Hospital

A joint venture between The University of Melbourne and The Royal Melbourne Hospital

www.doherty.edu.au
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Cover image: Hepatitis B virus – Jason Roberts, Royal Melbourne Hospital Senior Medical Scientist