

## **Professor Peter Charles Doherty AC**

Professor Peter Doherty studied veterinary science at the University of Queensland before taking his PhD in neuropathology at the University of Edinburgh, then joining the John Curtin School of Medical Research (JCSMR) at the Australian National University. It was during this period, as a research fellow studying viral immunity, that he collaborated with Rolf Zinkernagel on the work which eventually led to their Nobel Prize for Medicine. This conceptually-driven research revolutionised the field of immunology by explaining the mechanism of T-cell recognition in cell-mediated immunity: the discovery that T-cells recognise “altered self”, a complex of MHC (transplant) protein and foreign antigen on the surface of virally infected cells.

It is hard to overestimate the impact of this original discovery on clinical medicine. This phenomenon of MHC restriction is now a fundamental principle in immunology and has opened the door to an understanding of the immune system, influencing research into autoimmune disease, vaccine design, organ transplantation and the understanding of immune surveillance. The fundamental principles formulated by Doherty and Zinkernagel are considered during trials of vaccination against the emergence of metastases in certain forms of cancer and have led to better explanations for the associations between disease susceptibility and the histocompatibility antigen type carried by an individual for many chronic inflammatory diseases. Research subsequent to their discovery has also provided openings for selectively diminishing or altering immune reactions that play a central role in inflammatory diseases.

Peter Doherty's career has been stellar on an international scale. Since 1975 he has, in turn, studied influenza, rabies and multiple sclerosis with the Immunology Graduate Group at the University of Philadelphia, and headed the Department of Experimental Pathology at the JCSMR, then the Immunology Department at St Jude Children's Research Hospital in Memphis, Tennessee. Since 2002, he shares his time between St Jude's and his role as Laureate Professor in the Department of Microbiology and Immunology at the University of Melbourne.

As a world authority on cellular immunity, Peter Doherty's research currently focuses on viral infections, the role of CD8+ T cells in immunity and his involvement in a National Health and Medical Research Council program to develop a new-generation influenza vaccine. His name will grace a new University of Melbourne facility of biomedical scientists, public health specialists and educators, all focused on solving the puzzles of infectious diseases and immunity, when the Peter Doherty Institute opens in 2014.

To date, Peter Doherty has published over 330 scientific papers together with more than 110 solicited reviews, book chapters and commentaries, and has been honoured with many prominent awards. He holds honorary doctorates from 19 universities and has been recognised as Australian of the Year in 1997 and by his election to the Royal Society of London, the Australian Academy of Science, the US National Academy of Sciences and the French Academy of Medicine.

Concerned by the lack of scientific understanding in the wider community, Peter Doherty has consistently raised the public profile of science: through his two non-fiction books and his sustained contribution to an authoritative national discourse on science, in particular, meeting the linked challenges of climate change and food sustainability. Conscious of the weight of influence that adheres to the title of Nobel Laureate, his purposeful engagement is making a positive contribution to public debate on important issues for the future. He is an advocate for innovation and the role of science in society and is not afraid to speak out where he finds it necessary, championing ‘talk’ between scientists as a valuable, if obvious, path to insight – especially when today's global scientific community is demanding ever-greater specialisation of knowledge.

In his own words: 'We've lit big fires and gentle flames over the ages to open our minds, to warn of danger, to brighten our way through the darkness and to allow us to read in bed at night'. With enthusiasm and curiosity, this Nobel Laureate has set a bright blaze in the field of immunology, illuminating many continuing investigations and informing conversations that animate enlightened scientific dialogue.