

A Profile

The Walter and Eliza Hall Institute of Medical Research

The Walter and Eliza Hall Institute of Medical Research, located in Parkville just north of Melbourne's CBD, is a world leader in medical research. The work of the Institute is centered on the blood cell system and diseases that impact upon it. Our international reputation rests upon major contributions to immunology, haematology, cancer, malaria and autoimmune diseases such as juvenile diabetes.

Founded in 1915 with funds from a trust established by the Hall family, Australia's first medical research institute adopted a crest bearing the Latin inscription, *Fiat Lux – Let there be light*. Those simple words symbolise the Institute's mission: to illuminate the causes of disease and to apply these discoveries for the benefit of humanity.

The Institute first came to international prominence for pioneering contributions to virology, under Sir Macfarlane Burnet, Director from 1944 to 1965. Burnet later switched the focus of the Institute to immunology and autoimmunity, with remarkable impact. His own contributions led to the award of the Nobel Prize for Medicine in 1960. Burnet's theory to explain antibody diversity – “the clonal selection theory” – has been his most influential legacy to immunology.

Under Sir Gustav Nossal, Director from 1965 to 1996, the Institute grew significantly in size and scope. Immunology remained a central focus, with major contributions on clonal selection, “tolerance to self” and thymus development. Of note, immunity was shown to depend on two distinct types of lymphocytes – T cells from the thymus and B cells from the bone marrow. A reliable preclinical diagnostic marker for autoimmune juvenile diabetes was developed. The discovery of the hormones that promote white blood cell production – the CSFs – transformed haematology research and led to great benefits for cancer patients. With the introduction of molecular biology came important new insights about the genetic basis for antibody diversity, leukaemia and apoptosis (physiological cell death). Commitment to tackling the “great neglected diseases of mankind” significantly advanced understanding of malaria, leishmaniasis and schistosomiasis, paving the way for new approaches to therapy.

Led since 1996 by Professor Suzanne Cory, the Institute – or WEHI, as it is sometimes called – remains committed to its mission of *mastery of disease through discovery*. Strong new programs in bioinformatics, genetics of disease susceptibility, structural biology and medicinal chemistry are enabling our scientists to take full advantage of the Human Genome Project to advance health and medicine. The major current research areas are:

<i>Haematology</i>	cytokines and white blood cell production
<i>Immunology</i>	basic mechanisms, dendritic cells, vaccine development
<i>Developmental biology</i>	blood cell and neural systems
<i>Cancer</i>	apoptosis, lymphoma/leukaemia, breast cancer
<i>Infectious diseases</i>	malaria and leishmaniasis
<i>Autoimmune diseases</i>	type I (juvenile) diabetes, rheumatoid arthritis, multiple sclerosis, coeliac disease.

With its distinguished international reputation, WEHI is a magnet for bright young scientists from Australia and overseas. Today, the Institute hosts over six hundred scientists, postdoctoral fellows, graduate students, technologists and support staff, who thrive in what Professor Nossal memorably described as “a bubbling cauldron of ideas.”

