AUSTRALIA, Sydney – July 5, 2012 – A new Australian research laboratory and biobank will allow scientists to move to the forefront of medicine, to find futuristic ways to repair defective genes and use cells to repair the body.

The Ian Potter Foundation, an Australian philanthropic organisation that supports and funds initiatives of excellence and innovation across Australia, together with the Thyne Reid Foundation, and Westmead Medical Research Foundation have partnered to help fund two new facilities in Westmead Millennium Institute for Medical Research’s new building.

“Expanding these facilities will position Westmead’s health campus to become the leading centre in Australia and an internationally competitive centre for cell production and clinical translational research in adoptive immunotherapy,” said Mrs Janet Hirst, CEO of The Ian Potter Foundation.

As part of the expansion of Westmead Millennium Institute’s research facilities on the Westmead campus, the new Human Applications Laboratory will be used to find new ways to treat leukaemia, diabetes, heart disease and cancer. Scientists will examine how to increase pancreatic Islet cell production, for experimental treatment of Type 1 diabetes presently limited by capacity to just four or five transplant patients a year.

The new lab will also equip Westmead Millennium Institute to develop highly innovative and progressive gene and stem cell therapy addressing the causes of arrhythmia and repairing heart failure. The new lab will be supported by a state-of-the-art computerised Cell and DNA biobank for access by research projects across Australia.

“Scientists solved the genetic code for humans some years ago, but that took a huge amount of money and effort. Soon, we’ll be able to find out an individual person’s genetic code for under $1,000 in a few minutes,” said Westmead Millennium Institute’s director, Professor Tony Cunningham.

“These facilities will give us a way of doing something useful with the genetic information we are now able to gather more easily. Having found the genes that are defective, we need a way of repairing them, and that’s one of the fields
facilities will help our researchers to do. We are also moving into the era of replacing defective cells and tissues with human cells grown in the test tube in their normal configuration.

“This breaks the mould of the types of medicine that we’ve used in the past. This is not just new drugs. This is the future of medicine.

“These facilities will be open to all relevant researchers on this campus and elsewhere, helping both children and adults.

“We are very grateful to The Ian Potter Foundation for supporting the development of the Human Applications Laboratory, for the Thyne Reid Foundation for supporting the development of a Cell and DNA Biobank and also thank the Westmead Medical Research Foundation and its kind supporters for their contribution to these projects.”

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Please call WMI communications assistant Carmen Li on 02 9845 9000 for further information, or to arrange an interview with Professor Tony Cunningham.

MEDIA MATERIALS

• CASE STUDY – WMI RESEARCHER DR KENNETH MICKLETHWAITE

Genetic modification of immune cells to target lymphoma and leukaemia

My current NHMRC (government funded) project is aimed at producing clinical protocols for the generation of genetically modified immune cells to target lymphoma and leukaemia. The work is preclinical, but I am hoping we will have a clinical trial in the next 18-24 months.

Most lymphomas respond to therapy but then relapse. Immune cells can attack and kill virus related lymphomas. However, most lymphomas are NOT virus related. We will create immune cells targeting these virus negative lymphomas and leukaemias by inserting artificial receptors into the immune cells. These receptors attach to the lymphoma and leukaemia cells and activate the immune cells. The immune cells will home to the lymphoma and leukaemia, kill lymphoma and leukaemia cells and persist in the body for many years, preventing relapse.
• **Background information**

The new facilities will allow researchers to:

- Hold a gene therapy trial for children with brain tumours for whom other treatment options were exhausted.
- Broaden their experimental cell therapy approach to target additional viruses, which cause severe disease in transplant patients including Epstein Barr Virus, Varicella-Zoster Virus, BK virus, influenza and Adenovirus.
- Combine adoptive immunotherapy (where the recipient takes on the donor’s immune system) with vaccination after transplant as a new strategy to prevent infections.
- Combine dendritic cell vaccination and adoptive T cell therapy to prevent cytomegalovirus infection, which is dangerous in transplant patients and pregnant women.
- Create a bank of “off the shelf” immediately available T cell products for the treatment of viral infections that do not respond to conventional drugs. This bank will be a national resource accessed by adult and paediatric transplant units in every state to treat patients who have life threatening infections. This cell bank will be unique in Australia.
- Treat and prevent fungal infections in immune-compromised patients using an adoptive immunotherapy strategy.
- Treat patients with B cell leukaemias and other cancers using gene modified immune cells.

Already, researchers on the Westmead campus, one of the largest public health campuses in the Southern Hemisphere, using existing facilities, have established:

- The first experimental clinical islet transplantation unit in Australia which is the lead Australian site for the national islet transplantation consortium. As such they have performed 177 islet isolations for research. Thirty-four of these have also been used to perform clinical islet transplants. They have also recently performed Australia’s first combined kidney and islet transplant providing a functional kidney transplant and islets from the same organ donor to the one recipient, opening the potential for additional similar transplants to be performed.
- The largest and most productive xenotransplantation research program in Australia.
- The largest and most productive gene therapy research program in Australia.
- An experimental adoptive immunotherapy clinical trial program implemented through the Blood and Marrow Transplant Unit at Westmead Hospital, the only such program in Australia. More than 55 patients have been treated with products manufactured in this facility in the last 5 years. This is one of the largest single centre immunotherapy experiences in the world and the Westmead campus has by far the largest, best organized and most comprehensive stem cell transplant-related immunotherapy program in Australasia.
- The HAL also provides research support to Westmead Hospital’s bone marrow transplant (BMT) program, the largest in New South Wales and one of the largest in Australia. BMT labs do more complex processing of stem cells than is done in most other areas. Westmead Hospital’s BMT has already treated 50 patients, and has the potential to treat many more with increased capacity. Establishing the Human Applications Lab positions Westmead Hospital and WMI to become the centre for cell production and translation nationally.
Images available on request

About the Westmead Millennium Institute for Medical Research
The Westmead Millennium Institute is one of the largest medical research institutes in Australia, conducting research into a wide range of important human disorders affecting both adults and children. Our research spans cancer (including melanoma) and leukaemia; infectious and immune diseases; liver and metabolic diseases; eye and brain related disorders and heart and respiratory disorders. Our bench to bedside philosophy ensures patients benefit from our latest research discoveries. The Westmead Millennium Institute is proudly affiliated with The University of Sydney and Westmead Hospital. More information is available at www.wmi.org.au. Like the Institute on Facebook at www.facebook.com/WestmeadMillenniumInstitute and follow @WMImedresearch on twitter.

About Westmead Medical Research Foundation
Westmead Medical Research Foundation raises funds for research and care at Westmead. We believe everyone who is sick deserves access to the best possible treatment and care. To help make this possible we recognise the health problems Australians are facing and search for the best way to help. Our fundraising is directed to new equipment, research programs and upgraded services for Westmead Hospital and Westmead Millennium Institute for Medical Research. Our work has local, regional, national and global impact.

About The Ian Potter Foundation
The Ian Potter Foundation is one of Australia’s leading private philanthropic organisations. The Ian Potter Foundation works to uphold the aspirations and principles of our founder, Sir Ian Potter, and ‘give something back’ to the Australian community. The Foundation’s wide ranging funding programs reflect Sir Ian’s interest in the arts and his visionary approach to key issues including the environment, science, healthy communities, medical research, community wellbeing, and investment in Australia’s intellectual capital. Since 1964, The Ian Potter Foundation has contributed over $150 million to thousands of projects, both large and small.

About the Thyne Reid Foundation
The Thyne Reid Foundation is a private family foundation that supports projects in the fields of medicine, science, creative arts, education, social and community needs.

About the Westmead Hub
The Westmead Research Hub comprises the Western Sydney Local Health District Research and Education Network, the Westmead Millennium Institute for Medical Research, the Children’s Medical Research Institute and the Kid’s Research Institute at the Children’s Hospital Westmead.