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MEDIA RELEASE

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'No stone unturned' in research for type 1 diabetes cure

Australia's 120,000 type 1 diabetes sufferers are set to benefit from a \$4.5 million Turnbull Government funding boost for three new promising research projects.

The three *Innovation Award* grants from the Type 1 Diabetes Clinical Research Network support projects that include at least one researcher from outside the field of type 1 diabetes and are meant to promote collaboration between different areas of research specialisation.

Minister for Education and Training Simon Birmingham said the research funding would go to "some of Australia's brightest minds" to search for a cure for type 1 diabetes.

"This funding is about ensuring no stone is left unturned in the search for a cure for type 1 diabetes," Minister Birmingham said.

"The *Innovation Award* grants encourage creativity and new ways of thinking and nurture and support those smart ideas to help create a better future for Australians, including those with type 1 diabetes and their families."

Minister Hunt said the funding support for the *Innovation Award* grants built on more than \$35 million the Coalition Government was delivering for research into Type 1 Juvenile Diabetes research, a \$54 million commitment for the National Diabetes Services Scheme and \$1.5 million for additional insulin pumps for children.

"Researchers from all walks of life are working hard to help people with type 1 diabetes and their families and that sort of cross-discipline collaboration also has the potential to help patients suffering from other diseases," Minister Hunt said.

"With the leadership of JDRF Australia and their Type 1 Diabetes Clinical Research Network, these grants will help strengthen and expand the fantastic skill set, knowledge base and capacity of diabetes researchers."

The three Award recipients are:

- Associate Professor Charmaine Simeonovic - Australian National University, Canberra
- Associate Professor Stuart Mannering - St Vincent's Institute of Medical Research, Melbourne
- Associate Professor Shane Grey - Garvan Institute of Medical Research, Sydney

The *Innovation Award* grants are awarded by the Type 1 Diabetes Clinical Research Network (T1DCRN) which is run by JDRF Australia and funded by the Australian Government through the Australian Research Council's *Special Research Initiatives* scheme.

For more information, please visit www.t1dcrn.org.au or www.jdrf.org.au

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Innovation Award recipient project summaries

1. Associate Professor Charmaine Simeonovic, Australian National University. *Blockade of platelet-neutrophil interactions for T1D prevention and treatment.*

This study offers a new angle to the understanding of how insulin producing beta cells are damaged during T1D development. The team will evaluate the role of white blood cells called neutrophils and their interactions with other blood components called platelets. These cells interact to form platelet-neutrophil complexes, and it is proposed that they might play a role in activating the beta cell damage that leads to T1D. This concept has never been investigated in T1D before. By improving our understanding about how beta cells are damaged, we can more effectively develop new drugs that target these destructive processes and block the progression of T1D disease.

Associate Professor Simeonovic is leader of the Simeonovic Group in Diabetes and Transplantation Immunology at The John Curtin School of Medical Research at the Australian National University in Canberra.

2. Associate Professor Stuart Mannering, St Vincent's Institute of Medical Research. *Using autologous iPSC-derived beta cells to identify epitopes recognised by human islet-infiltrating CD8+ T-cells.*

Immune cells called T cells have been found at the 'scene of the crime' in the destruction of beta cells in the pancreas of people with T1D. While we know that T cells have a role in the immune response to beta cells, we still don't know exactly what is stimulating this response. This team was the first in the world to isolate specialised T cells from the pancreas, due to the sacrifice of people with T1D who donated their organs to research. This study will use the same donors to discover exactly what these immune cells "see" that leads to beta cell destruction. This new knowledge of the exact targets on beta cells could then be used to develop new therapies that turn off the autoimmune response leading to T1D.

Associate Professor Stuart Mannering is Head of the Human T Cell Laboratory at St Vincent's Institute of Medical Research in Melbourne.

3. Associate Professor Shane Grey, Garvan Institute of Medical Research. *Defining the "Islet-Helper" Treg to regenerate damaged beta cells.*

This team will for the first time look for ways to promote the regeneration or repair of the remaining beta cells in people with Type 1 Diabetes. It is thought that a subset of cells similar to those found in some animals may exist in humans. In cutting edge studies, they will uncover the function of these cells and test their potential in repairing islet damage. This study has potential to discover new therapeutic agents in regeneration as well as generate knowledge that may assist with increasing tolerance to islet transplants.

Associate Professor Shane Grey is Lab Head of Transplantation Immunology at the Garvan Institute of Medical Research.

About JDRF and type 1 diabetes

JDRF is the leading global organisation funding type 1 diabetes (T1D) research. JDRF Australia is built on a grassroots model of people connecting in their local communities, collaborating regionally for efficiency and broader fundraising impact, and uniting on an international stage to pool resources, passion and energy. Our mission is to accelerate life-changing breakthroughs to cure, prevent and treat T1D and its complications. To accomplish this, JDRF has invested nearly \$2 billion since our inception. We collaborate with academic institutions, policymakers, and corporate and industry partners to develop and deliver a pipeline of innovative therapies to people living with T1D. Our staff and volunteers in seven countries are dedicated to advocacy, community engagement and our vision of a world without T1D. For more information, please visit jdrf.org.au.

About the Australian Type 1 Diabetes Clinical Research Network (T1DCRN)

The Type 1 Diabetes Clinical Research Network (T1DCRN) is an innovative clinical research program led by JDRF Australia and funded by the Australian Government through the Australian Research Council (ARC) *Special Research Initiatives* scheme. The T1DCRN's goal is to accelerate patient benefit through supporting the most promising research projects, promoting and retaining outstanding scientists and attracting new researchers to the field of type 1 diabetes research.