



HARRY PERKINS INSTITUTE
OF MEDICAL RESEARCH



PERKINS Seminar Series

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WEDNESDAY 11 MAY



Dr James Chong

Clinical Cardiologist, Westmead Hospital Sydney
Head of the Cardiac Regeneration Laboratory
Westmead Institute for Medical Research/University of Sydney

"Repairing and Regenerating the Injured Heart with Stem Cells"

Dr James Chong MBBS, FRACP, PhD is a practising clinical cardiologist at Westmead hospital in Sydney and leads the cardiac regeneration laboratory at the Westmead Institute for Medical Research/University of Sydney. As a Heart Foundation Future Leader Fellow his research aims to develop cardiac

regenerative therapies for the treatment of heart failure. Current strategies being developed use both adult and pluripotent stem cell populations, in both small and large animal models of myocardial dysfunction. In recognition of this work he has received several awards including the 2014 NSW CVRN Ministerial Award for Rising Stars in Cardiovascular Research and the 2015 Heart Foundation Paul Korner Innovation Award.

Dr Chong trained in cardiology at Westmead Hospital before completing a PhD at the Victor Chang Cardiac Research Institute under the mentorship of Prof Richard Harvey. This doctoral training in cardiac development and stem cell biology focused on a previously unidentified population of cardiac stem cells. With the support of a Fulbright fellowship and a NHMRC biomedical training fellowship he undertook post-doctoral training at the University of Washington, Seattle, USA with Prof Charles Murry. During this period he extended his interests in translational cardiac regeneration to include the use of pluripotent stem cells in small and large animal models of myocardial infarction.

Dr Chong will address how stem cell therapies targeting the injured and failing heart could greatly decrease morbidity, mortality and burgeoning health care costs worldwide. These novel therapies can be broadly grouped into two categories. The first, Adult Stem Cells (ASCs) have a relatively limited ability to form down-stream differentiated cells (termed plasticity). Nevertheless, ASCs have already been used in many clinical trials aiming at cardiac repair. Most of these trials used bone marrow derivatives and demonstrated a favourable safety profile but inconsistent efficacy. ASCs can also be isolated from the human adult heart and initial clinical trials with these cells have shown more promising therapeutic potential. The second category, Pluripotent Stem Cells (PSCs) has an unquestionable ability to form bona fide, spontaneously contracting, cardiomyocytes. Clinical translation of PSC derivatives has been slower than with ASCs due to initial difficulties with cardiogenic differentiation. However, now we can produce PSC derived progenitors and cardiomyocytes in the vast quantities required for significant clinical cardiac regeneration. Clinical trials using PSC derivatives have begun and an exciting next generation of cardiac regenerative strategies is unfolding. In this presentation our work on human Platelet Derived Growth Factor Receptor-Alpha (PDGFR α) expressing cardiac derived ASCs and on human PSC derived cardiomyocytes (hPSC-CM) will be reviewed. Particular focus will be made on novel strategies to increase the proliferative and stem cell capabilities of cardiac PDGFR α -ASCs and on non-human primate experiments demonstrating the feasibility of human PSC-CM as a means to delivery clinical cardiac regeneration.

4:30pm till 5:30pm

SEMINAR ROOM 272, LEVEL 2, HARRY PERKINS INSTITUTE OF MEDICAL RESEARCH, NORTH CAMPUS

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To Perth

Your Guide to the



HARRY PERKINS INSTITUTE OF MEDICAL RESEARCH



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To Stirling Hwy

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