2011 PSTA WINNER CITATIONS

PRESIDENT'S SCIENCE AWARD 2011

(from left to right)

Dr Lim Bing
Dr Lawrence
StantonDr Paul
Robson
Dr Ng Huck Hui
Genome Institute of Singapore
Agency for Science, Technology and Research

"For their ground breaking work on the regulatory pathways controlling embryonic stem cell pluripotency and cell fate decisions"

Over the past nine years, Dr Lim Bing and his team members have comprehensively assessed genes required for stem cell function, and helped to define the specific functions of these genes through cutting edge genetic technologies, such as genome-wide sequencing. These efforts have led to the discovery and definition of novel regulatory factors required for the functions of embryonic stem (ES) and other stem cells.

The team's work has advanced the capability to maintain and expand ES cells, and to direct their differentiation to create specialised cell types. This knowledge is critical for the successful application of stem cells allowing them to provide industry, clinicians, or researchers with any cell they need for any applications. Their work has demonstrated the creation of stem cells from skin cells which not only enable cell replacement therapies from a patient's own cells, but also provide a greater scope of opportunities for in vitro disease modelling and drug screening. The ability to direct stem cell differentiation and to create "patient-specific" stem cells together greatly facilitates the important work in personalised regenerative medicine and drug discovery.

The team's present revolution in the understanding, control, and exploitation of stem cells represents not only a theoretical advance in stem cell biology but it has also opened new opportunities for innovation by other researchers and Singapore. Their work has placed Singapore prominently on the global map for stem cell research, and has been published in prestigious journals, in addition to receiving recognition internationally from the stem cell community. Their discoveries in basic biology and translational applications of ES cells and reprogrammed stem cells have attracted interest from research groups in both academia and industry from across North America, Europe and Asia. The team has also been active in training the next generation of stem cell scientists in Singapore.

For their outstanding contributions in stem cell research on the regulatory pathways controlling embryonic stem cell pluripotency and cell fate decisions, the team from Genome Institute of