NUS National University of Singapore | Department of Anatomy Yong Loo Lin School of Medicine

NUHS National University Health System

COMMONWEALTH SCIENCE CONFERENCE 2017

EXPLORING THE ORIGINS OF PLURIPOTENCY IN THE EARLY MAMMALIAN EMBRYO

THURSDAY
15 JUNE 2017

2:00PM – 3:00PM

SEMINAR ROOM, L2, MD10, DEPARTMENT OF ANATOMY, NUS

PROFESSOR JANET ROSSANT

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Toronto, Canada

Abstract:

The mammalian blastocyst contains about 100 cells and only three distinct cell types. One cell type, the epiblast, gives rise to all cell types of the body and to pluripotent embryonic stem cells, while the other two cell types give rise to placental and other support cells. Stem cell lines have been derived from all three blastocyst cell types in the mouse. These lines retain the cell lineage specificity of their embryonic origin. By studying both the embryo and its derived stem cells in the mouse, the key transcription factors and signaling pathways specifying cell fate in both situations can be identified. A detailed model of the development of the mouse blastocyst is now emerging. However, much less is known about the development of the human blastocyst and the process of establishing pluripotency in this species. Delineating the comparative aspects of cell specification between mouse and human is key to understanding the complexities of the various pluripotent states of human and mouse stem cells.

This event is held in conjunction with Commonwealth Science Conference 2017, which is jointly organised by The Royal Society and the National Research Foundation Singapore.

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