Institute of Molecular and Cell Biology
A*STAR

SEMINAR ANNOUNCEMENT

We would like to invite you to attend this seminar hosted by Prof. Wanjin Hong:

Date: 27 January 2015, Tuesday
Time: 11:00AM – 12:00PM
Venue: Level 3, IMCB Seminar Room 3-46, Proteos, Biopolis

Speaker: Prof. Frank Mckeon, Professor of Quantitative Cell Biology, The Jackson Laboratory for Genomic Medicine, Farmington, CT, USA
Title: Dissent in the Age of iPS Cells: Why Adult Stem Cells will Lead Regenerative Medicine, Disease Models, and Cancer Therapeutics Discovery

The discovery of iPS cells by Yamanaka and colleagues in 2006 sent shock waves through the stem cell community. Suddenly we had patient-matched, pluripotent stem cells for any conceivable regenerative strategy or disease model play, and moreover these cells had the approval of President Bush's Council for Bioethics and the Pontifical Academy for Life. As we close onto the first decade of iPS cells it is worth reflecting on the successes and challenges wrought by this technology. Without doubt we have seen iPSCs, along with embryonic stem cells, at the forefront of discoveries of epigenetic mechanisms underlying cell fate decisions that ultimately dictate development. And probably the best minds in developmental biology are discovering factors and methods to guide iPSCs through progressively restricted fates to yield desired end-product cells. That being said iPSCs face daunting challenges, not the least of which is the inability to generate normal tissue stem cells from them as evidenced most clearly by studies in hematopoiesis. As Howard Green and colleagues demonstrated with their cloning of epidermal stem cells in 1975, adult stem cells circumvent many of these issues we presently face with iPSCs. However, his approaches could not be generalized to adult stem cells of columnar epithelia (liver, pancreas, kidney, GI tract, etc.) where there are fundamental needs for disease models and regenerative medicine. We have now succeeded in the first steps enabling the cloning of "ground state" adult stem cells of columnar epithelia and cancers thereof, and discuss the opportunities and challenges of these patient-matched cells for both basic biology and human health.

Biography:
Frank McKEON and Wa XIAN jointly oversee a highly interactive group devoted to the cloning of stem cells of regenerative tissues and using advanced technologies to understand the genetics of their self-renewal, commitment, and differentiation. They have a strong interest in determining pathways by which these stem cells might contribute to precursors of cancers- in particular early lesions that lead to high-grade ovarian cancers as well as in the origins of intestinal metaplasias which precede esophageal, gastric, and pancreatic adenocarcinoma. Frank McKeon was born in New Haven and received his BA from Pomona College. He did his doctoral and postdoctoral studies in Biochemistry and Biophysics with Prof. Marc Kirschner at the University of California, San Francisco. He worked at Harvard University for more than twenty years and joined the Genome Institute of Singapore as a Senior Group leader in 2008. In 2012 he left Harvard to join the Jackson Laboratory for Genomic Medicine as professor and director of Quantitative Cell Biology. He has worked in several areas of cell biology including nuclear lamin dynamics, the spindle assembly checkpoint monitoring chromosome segregation, the role of NF-AT transcription factors in T cell activation, and mouse models of the p53 homologs p63 and p73. Wa and Frank have three children (11, 3, and 1) and presently live in Singapore and Connecticut.

ALL ARE WELCOME *(No registration required)*