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: 12 September 2018, Wednesday
Time: 11:00AM – 12:00PM
Venue: Level 3, IMCB Seminar Room 3-46, Proteos, Biopolis

Speaker: Prof. Chwee Teck Lim, NUS Society Chair Professor, Department of Biomedical Engineering, National University of Singapore
Title: Cell Mechanobiology & Applications in Disease Diagnosis & Therapy – From Bench to Bedside

In some diseases, pathogenic microorganisms or diseased cells can be present in peripheral blood. This has clinical significance as they present possible routes for disease detection, diagnosis and therapy. However, the presence of the large number of blood cells complicates removal of pathogens in blood as well as makes disease diagnosis such as detection of rare circulating tumour cells in blood of cancer patients extremely challenging. Here, we address these issues and show that mechanobiological properties such as cell morphology and deformability can be effectively used for diseased cell detection and separation from blood. We developed a suite of microfluidic platforms and demonstrate high throughput detection and removal of diseased cells relating to malaria, sepsis and cancer. These simple, efficient and cost effective platforms that rely on cell mechanobiological principles for disease diagnosis and therapy will be imperative in realizing point-of-care diagnostics and invaluable for many downstream clinical and biological applications. We have since commercialized some of these technologies in an attempt to bring them from bench to bedside and market.

Biography:
Professor Lim is the inaugural NUS Society Professor, Founding Principal Investigator of the Mechanobiology Institute as well as Acting Director of the Biomedical Institute for Global Health Research & Technology at NUS. His research interests include mechanobiology of human diseases and microfluidic technologies for diagnosis and precision medicine. Prof Lim has authored more than 360 journal papers and delivered more than 350 plenary/keynote/invited talks. He is an elected Fellow of both the American Institute for Medical & Biological Engineering and the International Academy for Medical & Biological Engineering as well as elected member of the World Council of Biomechanics. He currently sits on the editorial boards of more than 20 international journals. Prof Lim and his team have garnered more than 80 research awards and honors including the HFSP Awards in 2018 and 2012, International Precision Medicine Center Conference Prize 2017, Asian Scientist 100 in 2016, ASEAN Outstanding Engineering Achievement Award 2016, Wall Street Journal Asian Innovation Award

(Gold) 2012, President's Technology Award 2011 and the IES Prestigious Engineering Achievement Award 2010, 2016 among others.