

IMCB Invited Speaker



Speaker : A/Prof. Chunming Ding
Principal Investigator, Epigenomics and Molecular Biomarkers Lab Growth, Development and Metabolism Program, Singapore Institute for Clinical Sciences (SICS), Singapore

Date : 17 June 2013 (Monday)

Time : 11:00AM - 12:00PM

Venue : IMCB Seminar Room 3-46, Level 3, Proteos, Biopolis

Host : Prof. Wanjin Hong

Seminar :

Nucleic acid biomarkers and technologies for clinical applications

The activity (or lack of it) of the human genome is regulated by multiple layers of genomic information including DNA sequence, variations, modifications such as DNA methylation in a temporal and spatial specific manner, resulting firstly in proper and timely gene transcription. Such primary genetic and epigenetic information can be used to identify potential biomarkers for monitoring health and detecting of diseases. In a clinical setting, robust, sensitive and specific quantification of DNA and RNA signals are essential. As such, biomarkers and the technology to measure them are inseparable for clinical success. Our research over the last decade focuses on strategies leveraging biomarker discovery and technology development to translate our work into clinically useful molecular tests. Much of our translational research uses circulating blood and other readily available bodily fluid as a non-invasive source for monitoring pregnancy, tumor and infectious agents. Examples will be given to demonstrate the key concepts and strategies. Additionally, genomic and epigenomic data derived from translational research may be used to generate testable hypothesis for basic mechanistic research.

About the Speaker :

Dr. Ding is currently a principal investigator at the Singapore Institute for Clinical Sciences. He was an assistant professor in the Faculty of Medicine at the Chinese University of Hong Kong from 2005-2008, and a research assistant professor in the Bioinformatics program at Boston University from 2003-2004. He obtained his Ph.D. degree in Bioinformatics from Boston University in 2003 and his MS degree in Biochemistry from Brandeis University in 2000. His current research focuses on epigenomics and epigenomic regulation, molecular biomarker discovery for clinical diagnosis. He has pioneered a number of technologies for sensitive, specific and quantitative analyses of DNA and RNA, and has successfully applied them in non-invasive prenatal diagnosis, cancer monitoring, and pathogen analysis. His work has resulted in numerous publications in prestigious journals such as Science, Nature Medicine, Nature Biotechnology and PNAS with over 2,000 citations, and over 60 patent applications (23 granted), and multiple technology licensing deals with multi-million royalty income.