

# IMCB Invited Speaker



**Speaker : A/Prof. Jeremy Reiter**  
*Department of Biochemistry and Biophysics, University of California, San Francisco, USA*

Date : 14 March 2013 (Thursday)

Time : 11:00AM - 12:00PM

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

Host : A/Prof. Sudipto Roy

## Seminar :

### Regulation of ciliary composition controls Hedgehog signaling

Cilia are conserved, microtubule-based cell surface projections that emanate from basal bodies, membrane-docked centrioles. The beating of motile cilia and flagella enables cells to swim and epithelia to displace fluids. In contrast, most primary cilia do not beat, but instead detect environmental or intercellular stimuli. The signaling functions of cilia require regulation of ciliary composition, which depends on the control of protein traffic into and out of cilia. We have identified a biochemical complex at the transition zone at base of the cilium that regulates ciliary composition. Mutations in components of this complex cause ciliopathies called Meckel and Joubert syndromes. Genetic interactions between distinct transition zone complexes alter the phenotypic manifestations of the mutations.

## About the Speaker :

Jeremy Reiter investigates the ways in which cells communicate with each other during normal development and how this communication goes awry in disease. Much of his recent work has focused on the functions of primary cilia, Hedgehog signals, cancer, and wound healing. The Reiter lab has been elucidating mechanisms by which cilia transduce signals such as Hedgehogs, demonstrating that cancer cells can be ciliated and that cilia mediate Hedgehog-related oncogenesis, and elucidating how a region of the cilium, the transition zone, controls ciliary composition. Mutations in genes encoding transition zone components underlie a spectrum of diseases, now being called ciliopathies.



Institute of  
Molecular and  
Cell Biology

If you have questions about IMCB seminars,  
please contact [seminars@imcb.a-star.edu.sg](mailto:seminars@imcb.a-star.edu.sg).