



Singapore-MIT Alliance for Research and Technology



## **Cryo-Electron Tomography of *Trypanosoma brucei***

**Professor He Yingxin, Cynthia**

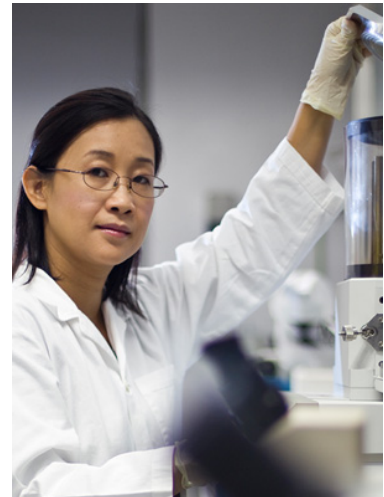
Department of Biological Science

National University of Singapore

**Date:** 11 Jan 2016, Monday

**Time:** 4pm to 5pm

**Venue:** Perseverance Room, Enterprise Level 5



### **Abstract**

*Trypanosoma brucei* is a single-cellular flagellate, causing African Sleeping sickness in humans and Nagano in cattle. Each *T. brucei* cell contains a subpellicular array that is composed of >100 stable microtubules crosslinked to each other, forming a bird cage-like structure underneath the plasma membrane. Development of the subpellicular array is tightly linked to biogenesis of the flagellum and the flagellum attachment zone and crucial for cell morphology, during the cell cycle as well as the life cycle development. In this study, we used cryo electron tomography to visualize the 3D organization of the subpellicular microtubule array in *T. brucei* cells. The results provide an ultrastructural model on how the flagellum drives helical rotations during cell movement by modifying the arrangement of the subpellicular array.

### **Biography**

Dr He Yingxin, Cynthia is currently an associate professor at the National University of Singapore. She is the winner of highly prestigious NRF Research Fellowship (2009). Cynthia obtained her PhD degree from the University of Pennsylvania. Cynthia's lab works with the parasite *Trypanosoma brucei*. They study the organization of cellular structures and the regulation of their co-ordinated duplication/segregation during cell cycle.

<http://www.dbs.nus.edu.sg/lab/cynthia/index.html>

<http://www.dbs.nus.edu.sg/staff/cynthia.htm>