
by

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Date: December 16, 2011 (Friday)
Time: 4:00 - 5:00 p.m.
Place: L2 Science Centre, CUHK

(Light refreshments will be served 20 minutes prior to the colloquium.)

ALL INTERESTED ARE WELCOME
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Abstract

The biological world, especially its majority microbial component, is strongly interacting and dominated by collective effects. I will provide a brief introduction of how living cells communicate genetically through transferred genes and the ways in which they can reorganize their genomes in response to environmental pressure. I will show how ideas from statistical physics can impact our understanding of microbial genome dynamics as they specifically relate to:

1. phenotype switching and specialization in closely-knit microbial communities known as biofilms
2. environmental drivers of genome variation, as may arise when a microbe becomes symbiotic to a host, or through spatial and temporal variation in the world's oceans.

Finally, I describe how my ongoing analyses of modern high-throughput genomics data are beginning to shed light on the complexity of real microbial communities and their evolutionary dynamics.

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