



CDB SEMINAR

Peter W.H. Holland

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Wednesday, November 30, 2016

14:00~15:00 Auditorium C1F

Homology and diversity in animal genomes

Summary

A major challenge for the 21st century is to understand how evolution at the genomic level translates to evolution at the phenotype level. This question is an extension of developmental biology, but adds in the great complexity of evolutionary change. It has been suggested that change to cis-regulatory DNA is the predominant type of mutation responsible for phenotypic change, but although this hypothesis has been widely repeated it has not been tested. First, we need to understand the relative importance of gaining new genes vs. re-using old genes. Using comparative genomics across the animal kingdom, I will show that the evolution of new genes is a common feature of animal evolution. Second, we wish to understand the relative contributions of cis-regulatory change and protein sequence change. Drawing on genomic data from oysters and desert rodents, I will also discuss unusual protein sequence change related to phenotypic evolution. These examples challenge the dogma of how genomic change links to phenotypic change.

Host:

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