

The Centre for Blood Research presents

CBR SEMINAR SERIES



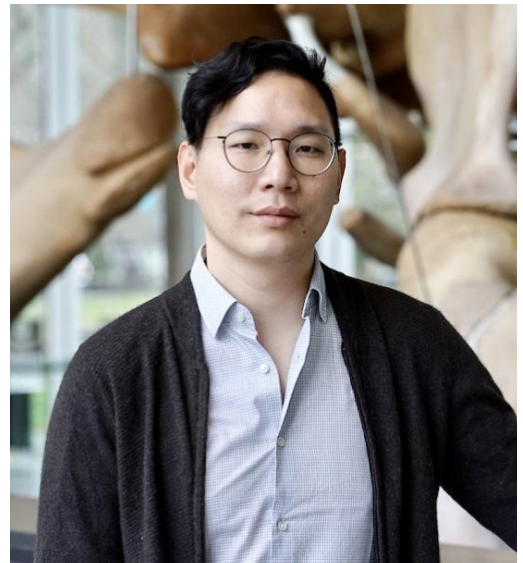
Wednesday, December 6, 2023
1:00PM - 2:00PM PT

Life Sciences Centre
1003 (LSC3) & Zoom

“The Genetic Battlegrounds Shaping Genome Complexity and Developmental Processes.”

DR. KEVIN WEI

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The genome is littered with selfish genetic elements that propagate at the expense of host fitness creating intragenomic conflict. Transposable elements (TE) increase their copy number via cut/copy and paste mechanisms which can cause deleterious gene disruptions and devastating genome instability. Genomic defenses against these selfish, parasitic elements precipitate molecular arms-races in the form of cycles of adaptive host control and evolved suppression escape. To showcase how these intragenomic battles impact the genome and developmental processes, I will present stories featuring various *Drosophila* species with unique genome architectures. I will show how the genome prevents the sneaky activation of TEs during the maternal-zygotic transition in early embryogenesis, how TE's selfish activities precipitate sex chromosome evolution, and how novel regulatory regime can emerge amidst rampant TE activity. In addition to illuminating the impacts selfish genetic elements have on the genome, I hope to highlight how such conflicting dynamics are key to driving developmental robustness, molecular innovation, and genome complexity.

Many thanks to
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