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CEEB SEMINAR SERIES

To catch a cheater: genomic dynamics and evolutionary consequences of selfish genetic elements.

The genome is littered with selfish genetic elements that propagate at the expense of host fitness creating intragenomic conflict. Transposable elements (TEs) 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. Showcasing Drosophila species with unique genome architectures, I will focus on a critical developmental stage called zygotic genome activation where this conflict plays out across developmental time and cellular space. I will show strategies TEs adopt to preempt the establishment of transcriptional silencing for better access to the germline, and the emergence of novel counter-strategy for the genome to re-establish control. Such dynamics highlight how genome conflict and molecular arms races are key to driving developmental robustness, molecular innovation, and genome complexity.

This is a virtual talk held over Zoom



On Zoom:

4 PM Thursday, November 12th