Seminar/Talk

Molecular evolutionary genetics of the two rules of speciation in Drosophila

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Host:

Speciation involves the gradual evolution of reproductive incompatibilities between populations including prezygotic incompatibilities that prevent the formation of hybrids and intrinsic postzygotic genetic incompatibilities that render hybrids sterile or inviable. Two strong rules of speciation implicate a special role for sex chromosomes in the evolution of postzygotic genetic incompatibilities: (1) Haldane s rule, the observation that hybrids of the heterogametic (XY or ZW) sex preferentially suffer hybrid sterility and inviability; and (2) the large X-effect, the observation that the X chromosome has a disproportionately large effect on hybrid sterility. Despite decades of effort, why the X chromosome plays a special role in speciation remains unclear. I will present results from our genetic and genomic studies of speciation among the three closely related species of the Drosophila simulans species complex D. simulans, D. sechellia, and D. mauritiana. Findings from our high-resolution genetic mapping studies, speciation genomics analyses, and molecular identification of a new hybrid sterility gene enable new inferences about the molecular and evolutionary causes of the large X-effect and its consequences for speciation.

Wednesday, February 15, 2017 09:45am - 10:45am
Mondi Seminar Room 3, Central Building

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