CBGP Centre de Biologie pour la Gestion des Populations

**Mardi 8 septembre 2026, 11:00**
Grande salle + visio.

# Conflict, Cloning and Genome Evolution in the Cape Honey Bee

par
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- The Cape honey bee is one of the most unusual insects known. Unlike other honey bee subspecies, workers are capable of producing female offspring without mating through thelytokous parthenogenesis, allowing entire clonal lineages to persist within colonies. This remarkable biology has made the Cape honey bee a powerful system for studying how genomes evolve under exceptional reproductive and social conditions.

- In this seminar, I will explore how its unique life history provides insight into two fundamental questions in evolutionary biology: how gene expression is shaped by parent-of-origin effects, and how genetic diversity can be maintained over generations. Evidence of paternally biased gene expression in female embryos supports predictions from kin selection theory, suggesting that maternally and paternally inherited alleles can have different evolutionary interests during early development. At the same time, the persistence of unexpectedly high levels of heterozygosity in a clonal lineage demonstrates that genome evolution does not always follow classical expectations, with substantial genetic variation retained despite decades of inbreeding.

- Together, these findings highlight how evolutionary conflict and reproductive biology interact to shape genetic variation and genome evolution in honey bees. More broadly, these studies demonstrate why the biology of the Cape honey bee continues to challenge established ideas about inheritance, adaptation, and genome evolution.