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SÉMINAIRE

The evolution of sexual dimorphism: Linking inter- and intra-sexual phenotypic and transcriptional variation

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Males and females of most species share nearly the entire genome, and yet they use many of their shared genes in radically different ways. Differential expression between males and females is thought to be product of conflicting male- and female-specific selection over optimal transcription, and to form the underlying basis of sexual dimorphism in many species. If the relationship between sex-biased gene expression and sexually dimorphic phenotypes is true, then several simple predictions can be made. First, altering sex-specific selection should elicit a response in sex-biased gene expression, and this response should be more pronounced for genes linked to sex chromosomes. Second, although sexual dimorphism is often envisaged as a dichotomous comparison between female and male forms, many species show more of a continuum, with some individuals occupying intermediate points along an axis of dimorphism. In these cases, the magnitude of sex-biased expression should reflect the degree of sexual dimorphism. Third, the degree of sex-biased expression should accumulate over time in response to continuous sex-specific selection. Case studies using both comparative and experimental evolutionary frameworks will be presented to address these predictions.