

Invitation to a guest lecture
at the joint colloquium of the Institute of Biology and Environmental Sciences, the
Department of Neuroscience and the Institute of Avian Research

Module bio890: Current topics in biology

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„The evolution and genetics of visual mate preferences in tropical butterflies“

Visual attraction is an important driver of mate choice and sexual selection, but little is known about the underlying genes, or how they evolve. Hybridization has been suggested to play a role in behavioural evolution, but a direct link between specific loci and behaviours has not previously been made. Here, we show that male preferences for red patterns segregate with a genomic region of increased admixture between red-preferring *Heliconius* species, indicating that introgression of preference alleles has contributed to the parallel evolution of visually-guided behaviours in these butterflies. Differences in neural expression of regucalcin, which coincides with this introgressed region, is associated with visual preference variation, and disruption of regucalcin with CRISPR/Cas9 alters courtship behaviour towards red females, proving a direct link between a gene and mate attraction behaviour. Our study paves the way for understanding how variation in visually-guided behaviours can be encoded at the genetic level, and can contribute to both adaptation and speciation.

Tuesday, 20.06.2023, 4:15 pm, W04 1-162/hybrid

Host: Prof. Dr. Miriam Liedvogel (Group Behavioural Genomics), IBU

Members of all institutes are cordially invited to join the lecture.