

Project Title: Hybrid immune vigor – molecular and cellular assessment eco-evolutionary phenomenon

Research Group: Ecology and evolution of molecular parasite-host interactions (HUB/Leibniz-IZW)

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Project Description:

Hybridisation is the recombination of genetic material between individuals of previously reproductively isolated populations. The European hybrid zone between two subspecies of the house mouse (*Mus musculus domesticus* [Mmd] and *Mus m. musculus* [Mmm]) is a tension zone, stabilized by selection against hybrids which are replaced by more pure individuals migrating into the zone. Despite the overall lower Darwinian fitness an increased resistance and tolerance against infections (improved health) has been described in hybrid mice from the field and recently validated in our own work using experimental infections with *Eimeria* spp.. Wild derived strains of Mmm and Mmd and their hybrids will be used in this project to investigate the molecular basis of hybrid vigor (heterosis) in immune reactions. Using transcriptomics to identify immunological pathways we will identify target cell types and potentially extend the project towards an identification of immunological mechanisms.



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