

M.Sc. OR B.Sc. Thesis**Determinants of genetic diversity in a globally distributed symbiont****Background**

About half of all terrestrial arthropod species (e.g., insects & spiders) carry a bacterial symbiont called *Wolbachia* that is passed on from mothers to offspring. *Wolbachia* influences host reproduction, physiology, and resistance to pathogens, and is therefore an integral part of arthropod biology. The symbiont is able to spread into novel host species and is now found in most terrestrial ecosystems worldwide. Prior work has established that *Wolbachia* is the most common endosymbiont on earth and that incidences in arthropod species correlate positively with temperature. In the last decades, many *Wolbachia* strains from different hosts were genetically or genomically characterised. However, the patterns and drivers of general patterns of *Wolbachia* genetic diversity are poorly understood. The aim of this thesis will be to identify climatic, geographic, and host factors (species richness and genetic diversity) that may drive *Wolbachia* genetic diversity.

Work plan

You will work with a database of global *Wolbachia* incidence and expand it with genetic data from public repositories (PubMLST, NCBI GenBank). You will create maps and identify important factors for *Wolbachia* genetic diversity using a variety of spatial and statistical tools (R, GIS).

Your profile

You are interested in macroecological and/or evolutionary processes.

You enjoy working with (or want to get experience in) one of these fields:

data mining / statistics / bioinformatics / exploratory data analysis

You want to benefit from a unique research environment with excellent infrastructure and work in a supportive and interdisciplinary team of researchers

More Information & contact

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Page 1 of 1