

Thesis-Topics 2025 - Evolution of Locomotion (Bachelor, Master BEE)

Bachelor or Master thesis:

Evolution and allometric scaling of sprint speed or jumping performance in arthropods

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Background: The ability to move fast is an important ecological trait. How sprint speed and jumping performance evolves and scales with body mass is well established for vertebrates, such as mammals, but poorly known for invertebrates.

Question: How does sprint speed / jumping performance vary across taxa and ecological niches? How does sprint speed scale with body mass from tiny mites to heavy tarantulas or beetles?

So far this is barely known to science - and you could change that!

Start: any time 2025

- Tasks:**
- field collection and identification of multiple species of a chosen arthropod group (e.g. arachnids, carabid beetles, hemiptera, orthoptera)
 - high speed video recordings of chosen locomotor mode (running OR jumping)
 - video tracking analyses and calculation of performance parameters
 - phylogenetic comparative analysis of performance parameters

Why should I take this topic?

- work with diverse species - get fascinated by biodiversity
- learn to use high speed video, digital video analysis and phylogenetic comparative methods
- learn about variation and evolution of locomotor traits and their effect on ecological functions
- work in a young, interdisciplinary team



Caught your interest? Please contact

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