



### [B.Sc. thesis] Influence of temperature on the bite force of insects

Bite force is an important performance trait of animals. It is directly linked to defence, food acquisition, manipulation and processing. While this performance trait has been extensively studied in vertebrates, knowledge on insect bite force is limited to about two dozen species only, and the evolution of insect bite force is unknown. Since insects are ectothermic animals, the influence of temperature should be quantified in order to reliably measure bite force when trying to understand its evolution.

Therefore, the aim of this project is to quantify the influence of temperature on the bite force of multiple species of different insect 'orders' such as grasshoppers & crickets, praying mantises, stick insects and beetles.

Apart from bite force measurements with our custom-designed setup, the project will involve computational approaches to analyse the maximum bite force of a species in relation to its size as well as the duration and frequency of bites under multiple temperature regimes. Therefore, prospective candidates should be motivated to work with living insects.

Of course candidates can expect to receive in-depth training regarding the above methodological topics. Candidates can expect to gain skills in programming, statistics, working with large datasets of different types and image analysis all of which will be beneficial for a career in science or the industry.

Applications should contain your CV, your transcript of records and a short statement about your motivation to work on the depicted topic in **one** PDF file.

The successful candidate will be supported financially with a student assistant (SHK) contract.

Contact can be made in English or German with Dr. Alexander Blanke (E-mail: [blanke@uni-bonn.de](mailto:blanke@uni-bonn.de)). Information about the workgroup can be found online <https://zoologie.uni-koeln.de/arbeitsgruppen/ag-blanke>

The workgroup will move to the Institute of Evolutionary Biology and Animal Ecology, University of Bonn, An der Immenburg 1, 53121 Bonn in September 2020. Work on the thesis can start in October or later.

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