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Eine Institution der
**Burggemeinde
Bern**

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**UNIVERSITÄT
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Call for a PhD Student in Comparative Genomics and Phylogenomics of Miniature Fishes Start in August 2019

We are seeking to fill a PhD position funded by the Swiss National Science Foundation (SNSF) in the group of Lukas Rüber to look at comparative genomics and phylogenomics of miniature fishes. This is a joint placement between the Department of Vertebrates, Natural History Museum Bern (NMBE) and the Institute of Ecology and Evolution (IEE), University of Bern.

The zebrafish, *Danio rerio*, is one of the most important vertebrate models for studies of development, genome evolution, and disease. This project aims to investigate the evolutionary consequences of miniaturization in close relatives of the zebrafish, including some of the most striking examples of miniaturization in vertebrates. We recently sequenced the genome of the dwarf minnow genus *Paedocypris*, comprising the smallest fish species, to investigate for the first time the genomic consequences of miniaturization in vertebrate species. We discovered drastic genome size reduction and extensive loss of *Hox* and other developmental genes in *Paedocypris* (Malmstrøm *et al.* 2018, <https://doi.org/10.1093/gbe/evy058>). In the PhD project, we will use whole genome data for an in-depth exploration of the evolutionary consequences of miniaturization in a broader comparative framework by providing a robust phylogenetic framework of zebrafish relatives. We will examine whether genome size reduction and extensive loss of developmental genes are general features of miniaturization in these fishes.

We are looking for a committed and enthusiastic candidate with an MSc or an equivalent university degree in biology/bioinformatics and a strong background/interest in evolutionary biology, phylogenetics, genomics and bioinformatics. Experience in tropical fieldwork and knowledge of fish systematics is an advantage. The PhD candidate will conduct demanding fieldwork in Southeast Asia collecting miniature cyprinid fishes, carry out whole genome sequencing of the collected material, and conduct phylogenomic analyses and comparative genomic analyses focusing on the evolution of genome size and *Hox* genes in the group. Our working language is English and excellent communication and writing skills in English are essential.

The project involves several partners including Ralf Britz (Natural History Museum, UK), Richard Durbin (University of Cambridge, UK), Kerstin Howe (Wellcome Sanger Institute, UK), Catherine Peichel (University of Bern, Switzerland) and Walter Salzburger (University of Basel, Switzerland). During the duration of the project, there will be opportunities for short-term visits to the laboratories of the project partners. Lukas Rüber (NMBE and IEE) will supervise the PhD student with co-supervision provided by Catherine Peichel and Walter Salzburger.

Salary for this four-year project is at SNSF PhD Fellowship level and the position is available from August 1st, 2019.

Bern is a vibrant city with a beautiful historic old town that has been declared a UNESCO World Heritage Site offering excellent quality of life. The nearby majestic Bernese Alps invite for a variety of outdoor activities.

Please email your complete application in a single pdf file containing the following: 1) your CV and publication list, 2) a letter of motivation, 3) a copy of your MSc or an equivalent university degree with grades, and 4) contact details of three referees to Lukas Rüber (lukas.ruber@nmbe.ch). Review of applications starts on May 31, 2019 and continues until the position is filled. Please direct further inquiries to Lukas Rüber (lukas.ruber@nmbe.ch).