

The Leibniz Institute for the Analysis of Biodiversity Change (LIB) is one of the large, globally connected research museums of the Leibniz Association. In addition to excellent research on biodiversity and its change, we are advancing the further development of our extensive scientific collections with an international team and state-of-the-art technology. With our exhibition, knowledge transfer and communication work at our exhibition venues Museum Koenig Bonn and Museum der Natur Hamburg, we want to spread enthusiasm for nature and contribute with our research topics to current socio-political discussions on species loss, climate change and the protection of ecosystems. The construction of an integrated natural history museum is being planned for the Hamburg location; the research infrastructure at the Bonn location is currently being significantly expanded.

The LIB has a vacancy for a doctoral student (f/m/d) at the Hamburg location, from 1. January 2024 limited to three years TzBfG, 65% hours, remunerated according to E13 (TV-L)

PhD Student (f/m/d)

in the DFG funded project "Evolution of the pectoral girdle and forelimbs of frogs and toads: from ontogeny to biomechanical mechanisms". The project will investigate the musculoskeletal system of the shoulder girdle and forelimbs of frogs using morphological and biomechanical methods. The project is a collaborative project with a research group of the University of Bonn and there will be a total of 2 PhD students employed in the project, who will work closely together and complement each other in some subprojects. The position advertised here will focus on the ontogeny, evolution and biomechanics of the musculature. In parallel, another PhD student in Bonn will study the evolution and biomechanics of the skeleton.

Tasks

- Preparation, digitization, processing, and evaluation of histological serial sections
- MicroCT scanning incl. sample preparation
- Segmentation and analysis of volume data, generation and processing of surface models
- Muscle homologization, character coding/scoring, and reconstruction of muscle evolution within frogs and toads
- In close collaboration with PhD student at the University of Bonn: creation of digital musculoskeletal models and performance of multibody dynamic analyses (MDA) to study muscle efficiency during different locomotion modes and interpretation of results regarding adaptation to locomotion
- Publication of results in scientific journals and presentation at scientific conferences

Requirements

Necessary:

- Completed degree in biology (Master of Science) or comparable.
- Ability to work in a self-organized and structured manner
- Ability and willingness to learn new subject areas and methods independently
- Ability and willingness to work in a team
- Creativity and proactivity
- Good command of written and spoken English

Desirable/of advantage:

- Knowledge of frog anatomy, especially of the musculoskeletal system of the shoulder girdle and the forelimbs
- Digital image processing (e.g. ImageJ/Fiji)
- Experience with CT scanning
- Experience in producing histological serial sections
- Experience in segmentation and analysis of volume data (e.g. Amira)
- Experience in creating and processing surface models (e.g. Modo)
- Experience in creating digital musculoskeletal models and performing MDAs (e.g. OpenSim)
- Programming skills in R
- Experience in publishing scientific results

The Leibniz Association is committed to diversity and gender equity. The LIB is certified as a family-friendly institution. We aim to increase the proportion of women in areas where women are under-represented and to promote their careers in particular. We therefore strongly encourage women with relevant qualifications to apply.

Applications will be handled in accordance with the Landesgleichstellungsgesetz NRW (State Equality Act). Applications from suitable individuals with a certified serious disability and those of equal status are particularly welcome.

Applications in English or German, accompanied by supporting documentation (CV, Letter of motivation including an explanation of personal interest in the project topic and, if applicable, how the topic relates to the applicant's previous work/courses/experience (max. 2 pages), CV including thesis titles and, if applicable, publication list should be submitted no later than 07.11.2023 only digitally to Josefine Winkels via this link: [Karriereportal](#)

Project-related questions can be addressed to [Karolin Engelkes \(k.engelkes@leibniz-lib.de\)](mailto:k.engelkes@leibniz-lib.de).

For further information about Museum Koenig Bonn and Museum der Natur Hamburg please see: <https://www.leibniz-lib.de>.