

In Faculty VI (Spatial and Environmental Sciences) of the University of Trier (Biogeography, Prof. Dr. Henrik Krehenwinkel), three PhD positions are to be filled in the Environmental Specimen Bank (ESB) project group from the earliest possible date:

3 PhD positions (m/f/d) – Temporal Biodiversity Change & Genomics

(E 13 TV-L, each 65%, fixed-term according to WissZeitVG, for 3 years.)

Your responsibilities

The German Environmental Specimen Bank (ESB) is a tool for systemically monitoring the health state of the environment and humans in Germany. It is technically and administratively supervised by the Federal Environment Agency. The German ESB collects environmental and human samples to archive them at ultra-low temperatures, analyze them for pollutants and keep them available in an unchanged state at any time. The ESB is thus a central element of environmental monitoring in Germany (please find more information at www.umweltprobenbank.de/en).

Highly standardized sampling and time series of samples from marine, limnic and terrestrial habitats going back to the 1980s give the Environmental Specimen Bank unique significance for biodiversity research. Cryogenic sample storage ensures the perfect preservation of DNA and RNA over decades. Hence, ESB samples are well-suited to investigate temporal biodiversity changes using genetic methods. We are filling three PhD positions to advance this kind of research.

As part of the employment, you will investigate temporal changes in biodiversity in Germany using ESB samples. Possible research topics may include:

- Investigating genomic changes in population dynamics of selected ESB species over time
- Investigating signatures of environmental stress in the transcriptome or epigenome of selected ESB species
- Investigating changes in animal or microbial communities associated with selected ESB species

Please find more information on the species and sampling locations at www.umweltprobenbank.de/en.

The research topic will be determined in consultation; your own ideas are welcome. Examples for current projects on biodiversity research with ESB samples include:

Junk, I., Hans, J. & Perez-Lamarque, B. et al. (2025). Archived natural DNA samplers reveal four decades of biodiversity change across the tree of life. *Nature Ecology and Evolution* 9, 1873–1884.

Hans, J. et al. (2025). eDNA metabarcoding of archived leaf samples reveals arthropod diversity decline in South Korean but not in German forest ecosystems. *Insect Conservation and Diversity*, 18(6), 1150–1162.

Junk, I. et al. (2023). Tracking climate-change-induced biological invasions by metabarcoding archived natural eDNA samplers. *Current Biology*, 33(18), R943–R944.

Krehenwinkel, H. et al. (2022). Environmental DNA from archived leaves reveals widespread temporal turnover and biotic homogenization in forest arthropod communities. *Elife*, 11, e78521.

Applications in a single PDF file are requested by December 31, 2025.

Please send your application via e-mail to

krehenwinkel@uni-trier.de
Universität Trier, Head of Biogeographie
54296 Trier

Contact for inquiries

Henrik Krehenwinkel
Phone: +49 651 201-4911 E-Mail: krehenwinkel@uni-trier.de
www.uni-trier.de

Participation in routine operations of the Environmental Specimen Bank project group is required. Tasks include:

- Participation in internal training sessions according to the quality management framework
- Conducting biota sampling in marine, limnic and terrestrial habitats
- Biometric sampling documentation
- Participation in regular meetings of the ESB project group
- Literature research on sampling areas and species (if applicable)
- Preparation of site descriptions for sampling areas (if applicable)
- Contribution to annual and activity reports

Please find more information on the ESB project group on the Biogeography website of the University of Trier.

Your profile

Successful applicants have:

- A completed university degree (Master's, Diploma, or equivalent) in biology, environmental sciences, forestry, agricultural sciences, or a comparable discipline
- Willingness to pursue a doctorate on an ESB related research topic using innovative molecular genetic approaches (e.g. metabarcoding, metagenomics, population genomics)
- Experience in/willingness for field work
- Teamwork skills
- Excellent English skills (spoken and written)
German language proficiency at a level suitable for professional communication
- Desirable: experience with R and statistics

Our offer

- A diverse range of tasks in biodiversity research and routine operations at the Environmental Specimen Bank
- Extensive training opportunities
- International research collaborations and a motivated, well-connected scientific team
- A family-friendly university with vacation childcare services
- Discounts for university sports and cafeteria
- Annual bonus payments in accordance with tariff regulations

Employment requirements are based on § 57 (2 and 3) HochSchG. A degree with above-average results in the relevant disciplines is essential.

The University of Trier strives to increase the proportion of women among its staff and strongly encourages women to apply. Applicants with severe disabilities or equivalent status according to § 2 (3) SGB IX will be given preferential consideration if equally qualified (please provide proof).

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Please submit your application documents (letter of motivation, CV, copies of certificates) as a single PDF file to **krehenwinkel@uni-trier.de**. For details on data processing, please refer to the privacy notices for application procedures in accordance with Article 13 DSGVO on our homepage.

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