



The Institute for Plant Ecology and Evolution at the Faculty of Mathematics and Natural Sciences of Heinrich Heine University (HHU) Duesseldorf, Germany, invites applications for a

### PhD (w/m/d) (50 %, EG 13 TV-L, for 3 years):

### Rapid Evolution to Changing Environments in Brassicaceae: Bridging Ecology and Genetics

To be filled as soon as possible

Our research focuses on the responses of plant populations to climate change and attempts at disentangling the relative contributions of adaptation, phenotypic plasticity, and range shifts. We also aim to identify the drivers of rapid contemporary evolution and to uncover the genetic basis of climate change adaptation. To examine these themes, we combine traditional field- and greenhouse-based studies, as well as the resurrection approach, with quantitative genetics and ecological genomics. Our lab is integrated in the research initiative [TRR 341 on Plant Ecological Genetics](#).

We are looking for a motivated PhD candidate to study the ecological and genetic adaptation to changing environments in the annual *Brassica rapa* and closely related Brassicaceae species. The candidate is also encouraged to develop related projects within the lab's research framework. The position has a teaching requirement of 2 SWS (contact hours per week).

#### What are your tasks:

- Use the resurrection approach to study rapid evolution in Californian *Brassica rapa* populations in response to drought and examine potential costs of adaptation under water and nutrient limitations (i.e., common garden experiment)
- Conduct fieldwork for *in situ* sampling and scoring of local Brassicaceae species and populations and subsequent common garden experiments to identify intraspecific trait and genetic variation underlying ecological diversification and local adaptation
- Apply statistical and computational tools for the analysis of trait, environmental, and next-generation sequencing data
- Present research results at conferences and publish in peer-reviewed scientific journals
- Supervise and mentor students in the lab

#### What do we expect:

- MSc in the field of plant biology, ecology, botany, evolutionary or population genetics, quantitative biology or related
- Strong interest in plant ecological genetics, quantitative and evolutionary biology, contemporary evolution, and field ecology
- Experience conducting large multi-factorial plant experiments (i.e., common gardens, reciprocal transplants, etc.) is preferred
- Experience in the use of statistical data analysis and programming languages (e.g., R, Java, Python) is preferred
- Experience with population genetics, NGS data, SNP calling, genome annotation, standard molecular techniques is preferred
- The languages spoken in the group are English and German - demonstrated ability to communicate effectively in English is essential (written and spoken) and German is preferred
- Lawful ability to work in the EU (i.e., Schengen residence/work permit)

#### We offer you:

- A unique, dynamic, and interdisciplinary research network in the field of Plant Ecological Genetics ([TRR 341](#)), funded by the DFG, that bundles the expertise of excellent scientists from seven different research institutions
- A comprehensive training program with targeted scientific education in the field of Plant Ecological Genetics as well as complementary training supporting your personal and career development ([GEcoGen](#), [iGRAD](#), [JUNO](#), [HeRA](#))
- Family-friendly and multicultural working environment

#### To apply:

Qualified candidates should send their application (Cover letter including statement of interest – max. 2 pages, CV including publication list, contact info of two references, BSc and MSc certificates) by e-mail (one single pdf-file) **until 30.04.2024** to [elena.hamann@hhu.de](mailto:elena.hamann@hhu.de).

If you have further questions on the project or position, please contact [Prof. Elena Hamann](#) - and see lab website <https://www.biologie.hhu.de/institute-und-abteilungen/institute-hhu/pflanzenoekologie>.