



We offer a PhD position within an ambitious plant research environment:

Exploring the concept of disparity as an evolutionary principle of plant robustness

The Cluster of Excellence GreenRobust (<https://greenrobust.de/>) invites applications for a **PhD position** in the Department of Biodiversity and Plant Systematics at the Center for Organismal Studies (COS), **Heidelberg University**.

The emergence of form and function as a result of the genetic make-up of a plant has to rely on newly generated genetic diversity on which evolution can act on, and which may result in new and even diversified functions and species diversification. On a macroevolutionary scale chromosome and in particular genome duplications are among the most prominent processes leading to the divergent evolution of orthologue and paralogue genes, and which provides respective genetic diversity that ultimately define variation from the molecular to the morphological level. Genetic/Genomic and respective functional diversity will be used to explore the concepts of diversity and disparity beyond morphological form and function and explore the principles of this idea on genomic/genetic level across the Brassicaceae family (Walden et al., 2020; Nature Communications: 10.1038/s41467-020-17605-7). The successful candidate will join the research group of Marcus Koch and will closely collaborate with Nora Walden. The project combines evolutionary genomics with conceptual research on phenotypic variation along the phylogenetic space and across different levels of complexity of trait and characters (morphology, traits, and genetic diversity).

The overarching goal of our joint project, REVALUTION, is to re-evaluate ambiguous ligand–receptor interactions in an evolutionary framework and apply concepts of diversity and disparity. Plants rely on pattern recognition receptors (PRRs) to detect invading pathogens, with leucine-rich repeat receptor-like proteins (LRR-RLPs) representing one of the most diverse receptor families. The Medina-Puche/Gust groups at the ZMBP in Tübingen explore how genome evolution drives the diversification of these plant immune receptors and their capacity to recognize diverse pathogen-derived molecules, using the Arabidopsis receptor RLP30 and the Nicotiana receptor RE02 as model systems (Yang et al., 2023, Nature Communications; Yang et al., 2025, Nature Biotechnology). Our partners in Tübingen focus on molecular and functional biology to discover novel Brassicaceae immune receptors and unravel the molecular principles governing ligand recognition and downstream signalling in RLP30/RE02-like receptors.

Main Task, qualification and skills:

We are seeking an enthusiastic and highly motivated graduate with an excellent Master's degree in Biology, Biochemistry, or a related discipline. The ideal candidate

- Has a strong interest and thorough understanding of plant evolutionary biology and genomics
- Is proficient in English, has excellent writing skills
- Has hands-on experience in plant evolutionary biology and bioinformatics and statistical data analysis skills (ideally using R)

The successful applicant will benefit from:

- A stimulating, collaborative, and supportive international research environment.
- Integration into the interdisciplinary GreenRobust research network (Heidelberg, Tübingen, Stuttgart).
- Access to state-of-the-art research infrastructure and facilities.
- Opportunities for scientific and professional development through mentoring and career training.

The position is available from November 2026 and is funded for three years (65% TV-L E13), with the possibility of extension.

Heidelberg and our partner project location Tübingen is a vibrant university town offering an exceptional quality of life in a beautiful historic setting.

Heidelberg University is committed to equal opportunities and diversity. We particularly encourage applications from qualified women. Applicants with severe disabilities will be given preferential consideration in cases of equal qualification, in accordance with German law.

Please submit your application as a single PDF file containing:

- a non-AI letter of motivation, all relevant certificates
- a summary of your previous research experience
- a curriculum vitae
- the contact details of two academic referees

Applications should be sent as **one single PDF** latest by 9th October 2026 via email to Prof. Dr. Marcus Koch (marcus.koch@cos.uni-heidelberg.de) and Dr. Nora Walden (nora.walden@cos.uni-heidelberg.de). Screening of applications will begin on 10th October 2026 and continue until the position is filled. Please be prepared for an online meeting via ZOOM.