



Conserving - Exploring - Exploiting

The [IPK](#) is one of the world's leading international institutions in the field of plant genetics and crop science. Its research program and services contribute significantly to conserving, exploring and exploiting crop diversity. Its research goals are driven by the need to ensure an efficient and sustainable supply of food, energy and raw materials, thereby addressing a major global ecological challenge.

Postdoctoral Scientist (f/m/d)

Join the **Metabolic Diversity** research group at the IPK in the frame of the collaborative BMFTR-funded project "MZP: Twin-3". Our team, led by Dr. John D'Auria, explores how specialized metabolism and lineage-specific chemical defenses drive stress resilience in cereals.

Postdoctoral Research Topic: Genetic and Regulatory Basis of Hordatine Biosynthesis in Barley

Objectives: Use state-of-the-art "digital twin" resources to dissect the pathways governing hordatine production. The project aims to link metabolic diversity to stress resilience by identifying causal genes and regulatory networks through integrated metabolomics and pan-genomics.

Your tasks:

- **Multi-omics Discovery & GWAS:** Combine LC-MS untargeted profiling with GWAS and mediation analysis to establish causal links between genomic loci, gene expression, and hordatine variation.
- **Functional Defense Analysis:** Conduct pathogen assays (Scald and Powdery Mildew) to test the role of hordatines in Quantitative Disease Resistance and evaluate potential fitness trade-offs.
- **Advanced Allele Mining:** Mobilize the project's 15,000-accession variant matrix and Regulome Atlas to identify high-impact alleles and regulatory determinants for breeding.
- **Data Management & Dissemination:** Handle the interpretation of large-scale metabolic and genomic datasets and ensure findings are integrated into the Twin discovery platform. Present results at national and international scientific conferences and prepare high-impact publications in peer-reviewed journals.

Your qualifications and skills:

- You hold a PhD degree (or equivalent) in biology, biochemistry, bioinformatics, crop science, or a related field.
- **Mandatory:** Profound expertise in LC-MS-based untargeted metabolite profiling and statistical genomics (GWAS).
- **Highly Desirable:** Practical experience in studying molecular plant-pathogen interactions, specifically focusing on fungal defense mechanisms
- You have a documented track record of publications in relevant research areas (e.g., plant specialized metabolism, statistical genomics, or plant-pathogen interactions).

You fit to us:

- if you are fascinated by metabolic diversity and have a strong interest in plant specialized metabolism and chemical ecology.
- if you are interested in large-scale data integration and the "digital twin" approach to cereal genomics.
- if you have a strong scientific curiosity and motivation.
- if you enjoy working in a highly interdisciplinary team of bioinformaticians and biologists.
- if you have solid oral and written English skills.

We offer you:

- the opportunity to work in a world-class research center with state-of-the-art facilities and scientists from all over the world.
- a collegial working atmosphere.
- a full-time position with 40 hours per week starting on 01.09.2026, limited for 2 years according to § 2 WissZeitVG
- a gross salary up to 100% E13 TV-L.

If you need further information, feel free to contact **Dr. John D'Auria** Tel.: +49 (0) 39482 5-176

What you need to know:

For us, your qualifications and strengths count. Therefore, everyone – independent from gender, origin, age, or possible disability – is welcome. The IPK is striving to increase the proportion of women in sectors where they are underrepresented and therefore explicitly encourages qualified women to apply. As an institution which has been awarded the Certificate for Career and Family ("berufundfamilie"), we offer family-friendly working conditions and flexible working hours. The IPK has set a goal to employ more people with disabilities. Qualified applicants with a disability will be given preference.

Your application:

We are looking forward to receive your online-application (letter of motivation, CV, certificates) as one single pdf document (<http://www.ipk-gatersleben.de/en/job-offers/>) until **03.06.2026**. If you have questions or require more information, please do contact **Kerstin Schweigert** (jobs@ipk-gatersleben.de).

Please indicate the reference number **23/04/26** in your correspondence. Please note that incomplete application documents cannot be considered. Foreign qualifications must carry out an equivalence test in Germany, which is subject to a fee. This must be presented in the event of later hiring: <https://zab.kmk.org/en/statement-comparability>