From March 1, 2020 onwards, the Agroecology and Organic Farming Group at the University of Bonn seeks to employ, for up to 3 years and 9 months, max. until December 31, 2023

1 Doctoral Student (65%) (TV-L 13)

The successful candidate will be involved in the Cluster of Excellence “PhenoRob: Robotics and Phenotyping for Sustainable Crop Production” (http://www.phenorob.de/) funded by the Deutsche Forschungsgemeinschaft. Specifically, the research will contribute to the project “Selective weeding for improved biodiversity” within the core project 4 “Autonomous In-Field Intervention”.

Precise robotic weeding aims to intervene in a minimally invasive manner reducing the amount of inputs (such as herbicides), but also to selectively choose which weeds have to be managed at a particular time and how they are managed. This research project will explore the potential to selectively destroy weeds, or not, within the field to enable better long-term management cycles. Knowing what weed taxa are present in the field along with the degree of competition with the crop is critical to enabling a richer ecologically-based understanding of the agro-ecosystem. This will promote a deeper insight into alternative ecological approaches to weed management, e.g. by potentially retaining beneficial weed flora. The project aims to assess the ecological impact of selective weeding on biodiversity and longer-term integrated weed management. Several weed maps per season will be created to observe species and growth rate and analyze the trade-off between crop productivity and biodiversity. Methods include vegetation analyses on at least one organically and one conventionally managed experimental site. The approach of PhenoRob is characterized by the integration of robotics, digitalization, and machine learning on one hand, and modern phenotyping, modeling, and crop production on the other.

Your tasks: Planning, organizing and conducting field trials with a focus on weed diversity and weed impact on crop growth

Gathering and analyzing data from these field experiments

Publishing results in peer reviewed journals and presenting them at conferences

Collaborating on joint research with colleagues involved in PhenoRob

Your profile: An excellent Master degree in agriculture, ecology or related disciplines, with a focus on vegetation analysis, crop science and/or plant-plant interactions

Ability to identify weed species in the field

Experience in field experimentation

Experience in handling and analyzing large and complex datasets

An interest in interdisciplinary and collaborative research

We offer: Participation in the international research hub The Cluster of Excellence “PhenoRob

An open, stimulating and interdisciplinary work environment where good ideas are encouraged and supported

The opportunity of conducting research towards a PhD and of receiving the support necessary to do this successfully

Enrolment in the Theodor Brinkmann Graduate School of the Agricultural Faculty

65% TVL E13 on the salary scale

Applicants please submit (1) A letter of motivation including your specific research interest (max. 2 pages), (2) a curriculum vitae including a list of publications, (3) a copy of your Master degree, (4) the names and contact details of two referees (position, professional address and e-mail).

The University of Bonn is committed to diversity and equal opportunity. It is certified as a family-friendly university and aims to increase the number of women employed in areas where women are under-represented and to promote their careers. To that end, it urges women with relevant qualifications to apply. Applications will be handled in accordance with the Landesgleichstellungsgesetz (State Equality Act). Applications from suitable candidates with a certified disability or equivalent status are particularly welcome.

If you are interested in this position, please submit your complete application documents as a single pdf by January 15, 2019 to Prof. Dr. Thomas Döring at aol@uni-bonn.de, reference “Phenorob CP4-A3”.