

From January 1, 2020 onwards, the **Agroecology and Organic Farming Group** at the University of Bonn seeks to employ, for **up to 4 years, 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 a project on mixed cropping of grain legumes and cereals within the core project “New Field Arrangements”.

Crop mixtures offer multiple advantages over sole crops, including more efficient resource use, reduction of production risk and diseases reduction. Currently, however, crop mixtures are not widely adopted by farmers, for technical, socio-cultural, economic and agronomic reasons. Obstacles to wider adoption include high testing costs because of the large number of crop combinations and because interactions between partners in crop mixtures are modified by environmental conditions. Currently, tools are missing to determine optimal mixture composition and management with respect to yield and other ecosystem services. With the aim to develop multifunctional mixtures for sustainable crop production the specific objectives of this research are to gain insights into the mechanisms governing the multifunctional performance of mixtures and to optimize partner combinations based on their specific traits. Methods include the pre-experimental selection of multiple partners, covering a large space of trait diversity; testing a large number of binary mixtures and sole crops in multiple environments, mainly in field trials; and phenotyping mixtures using advanced sensing techniques complemented by classical agronomic and ecological assessments. 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 crop mixtures
 - 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 crop science and/or plant-plant interactions
 - 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 September 15, 2019** to Prof. Dr. Thomas Döring at aol@uni-bonn.de, reference “Phenorob CP5.1”.