

PhD Position in Plant Ecology (Application deadline extended to 31/01/2024)

The *Department of Landscape Ecology and Vegetation Science* at the University of Hohenheim in Stuttgart (Germany) seeks a **PhD student in plant ecology** (m/f/d). Preferred starting date is **1 April 2024** (with some flexibility), for a duration of three years. Salary and conditions are according to public service positions in Germany (TV-L E13; 65%; see <https://oeffentlicher-dienst.info/tv-l/allg/>). Availability of this position is subject to a positive funding decision by the German Research Foundation (DFG, decision expected in early 2024).

The PhD position will investigate **fitness consequences of trait-mediated interactions between the invasive plant *Impatiens glandulifera*, native plants and their pollinators (from the plant perspective)**. The project is led by PD Dr. Christine S. Sheppard (the plant perspective) and Prof. Dr. Ingo Grass (the pollinator perspective). It forms part of a group of four projects investigating **fitness landscapes of biotic interactions in various systems from both a theoretical and empirical perspective** (see <https://ecology.uni-hohenheim.de/flint> for more information) and students will benefit from the diverse expertise of >10 PIs. Our project investigates plant-pollinator interactions focusing on *Impatiens glandulifera*, which is one of Europe's most severe plant invaders. Because it attracts many pollinators with its rich nectar, this species can also indirectly affect native plants by either reducing pollinator visits and fitness of co-occurring native plants (causing pollinator-mediated competition) or benefiting native plants due to pollinator spill-over (causing pollinator-mediated facilitation). To study the fitness consequences of interactions with pollinators for *I. glandulifera* and native plant species, the project will employ a functional trait approach, aiming to explain interactions based on the floral traits of plants and relevant size traits of the pollinators in various experimental settings and landscape contexts.

Main tasks:

- Conducting a mesocosm, a greenhouse and a large field experiment (in field sites around Baden-Württemberg, Germany) to obtain measurements of floral traits and seed set of plants in treatments/sites with and without *I. glandulifera* (in close collaboration with another PhD student focusing on the pollinator perspective in this system)
- Analysing the collected data and publishing the findings in high-quality peer-reviewed journals
- Actively participating in meetings, research seminars and workshops of the project and the working group on fitness landscapes of biotic interactions

Requirements:

- Very good MSc (or equivalent) degree in ecology or a related discipline
- Experience in experimental plant ecology (field or greenhouse) and/or plant-insect interactions
- Statistical skills (preferably using R)
- Oral and written communication skills in English (knowledge of German is not mandatory)
- Driver's license (for field work)

Working environment:

The University of Hohenheim is located on a beautiful campus situated in the Southern German city of Stuttgart, which offers a rich cultural life and attractive surroundings (Swabian Alb, Black Forest). The Department of Landscape Ecology and Vegetation Science (chaired by Prof. Dr. Frank Schurr) investigates how biodiversity dynamics at different spatial and temporal scales arise from ecological and evolutionary processes. Using a broad methodological spectrum, we aim to better understand and forecast biodiversity dynamics under global change (see <https://ecology.uni-hohenheim.de/en>).

Application:

Applications should include a motivation letter, CV, certificates and the names and contact details of two potential referees in a single PDF document (deadline: 31/01/2024). The University of Hohenheim seeks to increase the proportion of women in research and teaching and strongly encourages qualified female scientists to apply. With equal qualifications, preference will be given to candidates with disabilities. For further information and to submit applications, please contact PD Dr. Christine S. Sheppard (christine.sheppard@uni-hohenheim.de).

PhD position in pollinator ecology (University of Hohenheim)

Application deadline: 19 January 2024

PhD position – Ecology of Tropical Agricultural Systems, University of Hohenheim, Stuttgart, Germany; 65% TV-L13; f/m/d

The *Department of Ecology of Tropical Agricultural Systems* at the University of Hohenheim in Stuttgart (Germany) seeks a **PhD student in pollinator ecology** (f/m/d). Preferred starting date is **1 April 2024**, for a duration of three years. Salary and conditions are according to public service positions in Germany (TV-L E13; 65%; see <https://oeffentlicher-dienst.info/tv-l/allg/>). Availability of this position is subject to a positive funding decision by the German Research Foundation (DFG, decision expected in early 2024).

The PhD position will investigate **fitness consequences of trait-mediated interactions between the invasive plant *Impatiens glandulifera*, native plants, and their pollinators from the pollinator perspective**. The project is led by Prof. Dr. Ingo Grass (the pollinator perspective) and PD. Dr. Christine Sheppard (the plant perspective). It is expected to form part of a group of four projects investigating **fitness landscapes of biotic interactions in various systems from both a theoretical and empirical perspective** (see <https://ecology.uni-hohenheim.de/flint> for more information) and students will benefit from the diverse expertise of >10 PIs. Our project investigates plant-pollinator interactions focusing on *Impatiens glandulifera*, one of Europe's most severe plant invaders. Because of its rich nectar and high attractiveness, *I. glandulifera* may benefit the fitness of those pollinator species that interact with it. At the same time, the displacement of native species by *I. glandulifera* can lead to a decline in the fitness of pollinators that specialise on native plants. We will use a functional trait approach and combine experiments with field studies on interaction networks to find out how *I. glandulifera* affects the fitness of pollinator species in different landscape contexts.

Your tasks

- Experimental mesocosm studies to understand how plant-pollinator trait matching drives interactions between *I. glandulifera*, native plants, and their pollinators, as well as pollinator fitness
- Field studies of plant-pollinator interaction networks and pollinator fitness in landscapes with and without *I. glandulifera* invasion in Baden-Württemberg, Germany
- Analysis of the collected data and publishing the findings in high-quality peer-reviewed journals
- Active participation in meetings, seminars and workshops of the project and the working group

Your profile

- Very good MSc degree in ecology or a related discipline
- Experience in insect ecology and field work
- Good knowledge of statistical analysis with *R*
- Good oral and written communication skills in English (knowledge of German is not mandatory)
- Driver's license for fieldwork

Working environment

We offer a position in a young and dynamic international research group led by Prof. Dr. Ingo Grass. Using a broad methodological spectrum and interdisciplinary approaches, our group aims to better understand and forecast agricultural ecosystems and biodiversity dynamics under global change (see also <https://agroecology.uni-hohenheim.de>). The University of Hohenheim is located on a beautiful campus situated in the southern German city of Stuttgart, which offers a rich cultural life and attractive surroundings (Swabian Alb, Black Forest).

Application

Please send your application as a single PDF-file per email to ingo.grass@uni-hohenheim.de latest until **19 January 2024**. Your application should include a motivation letter, CV, certificates, and the names (with email addresses) of two potential referees. The University of Hohenheim seeks to increase the proportion of women in research and teaching and strongly encourages qualified female scientists to apply. With equal qualifications, preference will be given to candidates with disabilities.

For further information, please contact

Prof. Dr. Ingo Grass – ingo.grass@uni-hohenheim.de – +49 771 45922385 – <https://agroecology.uni-hohenheim.de>

PhD Position in Pollination Biology (Application deadline: 15 January 2024)

The *Department of Plant Evolutionary Biology* at the University of Hohenheim in Stuttgart (Germany) seeks a highly motivated **PhD student with a keen interest in plant-pollinator interactions** (m/f/d). Preferred starting date is by **1 March 2024**, for a duration of three years. Salary and conditions are according to public service positions in Germany (TV-L E13; 65%; see <https://oeffentlicher-dienst.info/tv-l/allg/>). Availability of this position is subject to a positive funding decision by the German Research Foundation (DFG, expected in early 2024).

The successful candidate will be part of an international team investigating the effects of a highly specialised plant-pollinator interaction on the reproductive fitness of plants, male and female pollinators. The project, led by Dr. Simone Cappellari Rabeling and Prof. Philipp Schlüter, is part of a group of four projects investigating **fitness landscapes of biotic interactions in various systems from both a theoretical and empirical perspective** (see <https://ecology.uni-hohenheim.de/flint>). The advertised project will **examine fitness consequences of plant-pollinator interactions** using the sexually deceptive orchid *Ophrys* and its solitary bee pollinators as a model system. We will specifically investigate the effect of phenological (a)synchrony on the fitness of different interaction partners and manipulate insect and plant densities in an outdoor flight cage experiment. Fitness will be monitored directly and indirectly via population genetic analysis using state-of-the-art approaches. All field studies will be conducted in Southern Italy.

Main tasks:

- Field work (S Italy) to characterise phenologies of plants, male and female solitary bees
- Surveys and outdoor flight cage experiments to study plant and pollinator fitness and behaviour
- Genotyping-by-Sequencing (GBS, Illumina), population genetic and parentage analyses
- Analysis of data and publication of the findings in high-quality peer-reviewed journals
- Presentation of results (scientific meetings and seminars) to empirical and theoretical scientists

Requirements:

- Completed MSc degree (or equivalent) in biology or a related discipline
- Thorough understanding of ecology and evolution and a strong interest in pollination biology, plant, Hymenopteran and behavioural ecology. Interest or expertise in population genetics.
- Field experience (ideally working with plants and bees) and a driver's licence
- Lab experience to facilitate DNA extractions and Illumina sequencing library preparations
- Statistical data analysis skills using R
- The ideal candidate is intellectually rigorous, well organised, independent, resourceful and resilient
- Good communication skills and proficiency in oral and written English (Italian skills are a plus)

Working environment:

The University of Hohenheim is an innovative and international research university in the south of Stuttgart. The pleasant campus is close to the airport and hosts a well-equipped research infrastructure, a baroque palace and rambling parks. The successful candidate will be a member of the Department of Plant Evolutionary Biology (<https://peb.uni-hohenheim.de/en/>) and will work in a young, active and interdisciplinary environment. Extensive field work will be carried out in the Southern Italy, in collaboration with the group of Prof. Salvatore Cozzolino at the University of Naples.

Application:

Applications should consist of a letter of motivation (1-2 pages), CV, certificates and the names and contact details of two academic referees. Candidates should articulate their motivation for this project clearly in the cover letter and state why they think they are well-suited to undertake it. The University of Hohenheim seeks to increase the proportion of women in research and teaching and strongly encourages qualified female scientists to apply. With equal qualifications, preference will be given to candidates with disabilities. Please send your application as a **single PDF** file. For further information and to submit applications, contact Philipp Schlüter or Simone Cappellari Rabeling (via admin190b@uni-hohenheim.de). Interviews are tentatively scheduled for 22 January 2024.

PhD Position in Evolutionary Ecology (Application deadline extended to 26/01/2024)

The Department of Applied Entomology at the University of Hohenheim in Stuttgart (Germany) seeks a **PhD student in evolutionary ecology** (m/f/d). Preferred starting date is **1 April 2024**, for a duration of three years. Salary and conditions are according to public service positions in Germany (TV-L E13; 65%; see <https://oeffentlicher-dienst.info/tv-l/allg/>). Availability of this position is subject to a positive funding decision by the German Research Foundation (DFG, decision expected in early 2024).

The PhD student will investigate **reciprocal fitness consequences in the defense-mediated interaction between the toxic plant *Colchicum autumnale* and the sequestering herbivore *Spilostethus saxatilis***. The project is led by Prof. Dr. Georg Petschenka (Entomology), Prof. Dr. Andreas Schweiger (Plant Ecology), Prof. Dr. Anke Steppuhn (Molecular Botany) and Dr. Jörn Pagel (Landscape Ecology). It is part of a group of four projects that investigate **fitness landscapes of biotic interactions in various systems from both a theoretical and empirical perspective** (see <https://ecology.uni-hohenheim.de/flint> for more information), and students will benefit from the diverse expertise of >10 PIs. Our project focuses on the reciprocal fitness consequences of the interaction between the toxic plant *Colchicum autumnale* and its specialized predator, the seed bug *Spilostethus saxatilis*, which sequesters toxic *Colchicum* alkaloids for its own defense. The PhD student will investigate how the interplay of biotic and abiotic factors at small and large geographic scales affects fitness on both sides of the interaction (seed bug and plant). For this purpose, the project will integrate chemical analyses of toxic metabolites in insects and plants, characterization of the abiotic and biotic environment, fitness assessments of plants and seed bugs, reciprocal feeding, sequestration, and seed predation assays to test for local adaptation, and demographic/biogeographic modeling.

Main tasks:

- Field surveys of fitness and abundance in plant and insect communities across geographic and biotic gradients (i.e., plant populations with and without seed predators)
- Chemical analyses of alkaloids and other plant metabolites in insects and plants
- Laboratory and mesocosm experiments to test for local adaptation
- Data analysis and demographic/biogeographic modeling
- Publication of results in high-quality, peer-reviewed journals
- Active participation in meetings, research seminars and workshops of the working group on fitness landscapes of biotic interactions

Requirements:

- Very good MSc (or equivalent) degree in biology or a related discipline
- Experience with insects and/or plant-insect interactions and/or analytical chemistry
- Statistical skills (preferably using R)
- Oral and written communication skills in English (knowledge of German is desirable, but not required)
- Driver's license

Working environment:

The University of Hohenheim is located on a beautiful campus situated in the Southern German city of Stuttgart, which offers a rich cultural life and attractive surroundings (Swabian Alb, Black Forest). The Department of Applied Entomology (chaired by Prof. Dr. Georg Petschenka) has a strong focus on insect-plant co-evolution, but also covers research areas such as ecotoxicology of insecticides and novel approaches to pest management. Using a wide range of methods, we aim to advance coevolutionary theory and sustainable pest management (see <https://phytomedizin.uni-hohenheim.de/entomologiefg>).

Applications should include a motivation letter, CV, certificates and the names and contact details of two potential referees in a single PDF document. The University of Hohenheim seeks to increase the proportion of women in research and teaching and strongly encourages qualified female scientists to apply. With equal qualifications, preference will be given to candidates with disabilities. For further information and to submit applications, please contact Prof. Dr. Georg Petschenka (Georg.Petschenka@uni-hohenheim.de).