

2 x Doctoral candidates (PhD) (65%; d/f/m)

City bees under stress? Interactive effects of urbanization factors on bees and pollination

Project background:

Understanding the interacting impacts of multiple stressors in urban environments on bee–plant interactions is vital to conserve bee communities and maintain ecosystem services in cities. We aim to better understand the factors that determine the structure, resilience and functions of city bees. We will study bee–flower interactions, bee provision and pollination, in relation to garden floral management and urban environmental stressors hypothesized to impact bees, bee traits and bee–plant interactions. We will use urban gardens in Berlin and Munich, Germany as our study system. The research will investigate:

- How two selected environmental stressors, i.e., imperviousness and urban heat, and their interactions impact bee communities, inter- and intraspecific variation in bee traits, bee–plant interactions, and pollination
- How floral resource management at small scales interacts with these stressors

The work will improve the understanding of the ecology of urban bees and their response to environmental stressors to identify the most important traits that determine resilience and functioning of species interactions and ecological communities.

The DFG-Funded research project will hire 2 researchers (PhDs), who will work closely together to support a shared understanding of plant-bee interactions.

Who we are:

You will work closely with two research groups at the Technical University of Munich:

- Professorship for Urban Productive Ecosystems (**Monika Egerer**)
- Professorship for Plant Insect Interactions (**Sara Leonhardt**)

What we offer:

- An innovative and lively working environment at the university and campus
- Access to modern facilities and infrastructure at a strong research department
- Scientific exchange, flexibility, independence and self-responsibility
- Extensive options of vocational training (meetings, workshops, conferences)
- A chance to receive your doctoral degree
- TV-L E13 (65%), initially limited to 3 years

TUM is an equal opportunity employer. Qualified people of all gender are encouraged to apply. We strive to increase the proportion of women, so applications from women are especially welcome. Applicants with disabilities will be given preference, if they essentially have the same qualifications. As part of your application for a position at the Technical University of Munich (TUM), you are transmitting personal data. Please note our data protection information in accordance with Art. 13 General Data Protection Regulation (GDPR; Datenschutzgrundverordnung DSGVO) on collection and processing of personal data in the context of your application (<https://portal.mytum.de/kompass/datenschutz/Bewerbung/>). By submitting your application, you confirm that you have read TUM's data protection information.

PhD position 1 (65%)

Topic: The impact of urban environments on bee traits, bee-plant interactions, and pollination

Job description:

The researcher will collect field data on urban environmental features, bee traits, and pollination. Her/his main responsibilities will be the coordination of bee surveys, assessment of bee traits and interactions, set-up and monitoring of pollination experiments, and organization of laboratory work for bees. They will work closely with other PhD researcher to understand urban bee-plant interactions. The job will be mainly associated with the Professorship for Urban Productive Ecosystems in Freising, DE, but will be jointly supervised.

The candidate we are looking for ideally has:

- Motivation to elucidate complex ecological processes that underly mechanisms driving bee-plant interactions in urban ecosystems
- Ecological knowledge of pollinator biology and urban ecosystems
- Enthusiasm for and competence in ecological field work
- Experience with environmental data and quantitative data analysis
- Experience modelling and relevant languages (R, Python etc.)
- Interest in supervising and working with other students during your PhD

Job requirements:

- Excellent diploma or master's degree in related field
- Excellent skills in field and lab work
- Very good knowledge of English and German
- A driver's license valid in Germany
- Pronounced scientific and writing skills are a benefit

Starting date:

Negotiable, but ideally by October 2023 (part-time 65%, fixed-term for 3 years)

Interested?

Please send your application with: (1) a 2-page letter of interest including a short outline of career goals and research experience; (2) a detailed CV; and (3) contact information of two referees. Please send these documents in the form of one single pdf-file (CityBees_01_surname_forename_appldoc.pdf) by Friday, 28.04.2023 to Sandra Großkopf (sekretariat.upe@ls.tum.de).

Questions regarding project or position?

Please contact: Prof. Egerer or visit our webpages for more information on our research group and the kind of work we do: <http://upe.wzw.tum.de/>; www.upe-lab.de

Application closing date: Friday, 28.04.2023

PhD position 2 (65%)

Topic: The impact of urban environments on plant traits, bee-plant interactions, and bee provision

Job description:

The researcher will collect field data on plant traits, bee provision and garden management. Her/his main responsibilities will be the coordination of plant measurements, pollen and nectar collection and chemical analyses, set-up and monitoring of trap nests and the coordination of management surveys. The position will be mainly associated with the Professorship for Plant Insect Interactions in Freising, DE, but will be jointly supervised.

The candidate we are looking for ideally has:

- Motivation to elucidate complex ecological processes that underly mechanisms driving bee-plant interactions in urban ecosystems
- Ecological knowledge of plant biology, pollinator biology and urban ecosystems
- Enthusiasm for and competence in ecological field work
- Motivation to engage in outreach and communicate with non-scientists
- Experience with environmental data and quantitative data analysis
- Experience modelling and relevant languages (R, Python etc.)
- Interest in supervising and working with other students during your PhD

Job requirements:

- Excellent diploma or master's degree in related field
- Basic understanding of concepts in ecology, botany and chemical ecology
- Experience with field work and lab work
- Basic analytical skills
- Very good knowledge of English and German
- A driver's license valid in Germany
- Pronounced scientific and writing skills are a benefit

Starting date:

Negotiable, but ideally by October 2023 (part-time 65%, fixed-term for 3 years)

Interested?

Please send your application with: (1) a 2-page letter of interest including a short outline of career goals and research experience; (2) a detailed CV; and (3) contact information of two referees. Please send these documents in the form of one single pdf-file (CityBees_02_surname_forename_appldoc.pdf) by Friday, 28.04.2023 to Cornelia Wenske (cornelia.wenske@tum.de).

Questions regarding project or position?

Please contact: Prof. Leonhardt (sara.leonhardt@tum.de) or visit our webpages for more information on our research group and the kind of work we do: <https://www.pii.wzw.tum.de/>

Application closing date: Friday, 28.04.2023