PhD project

Understanding the drivers of floral specialisation and its impact on bee nutrition and health

Application deadline: **Midnight 11th December 2024**

Background

We invite applications for a 4-year PhD project (standard UKRI stipend) at the University of Bristol, UK. This opportunity is part of the SWBio Doctoral Training Program. The project will investigate the causes on consequences of flower constancy, a behaviour which is critical for plant-pollinator interaction patterns and plant fitness. Flower constancy affects bee foraging efficiency and diet diversity, potentially impacting bee nutrition and health.

Environmental change affects the availability, distribution and characteristics of floral resources, leading to changes in foraging and pollination patterns. For example, bees might prefer warmer nectar and shorter flight distances, leading to higher flower constancy and narrower diet in more patchy and warmer habitats. This PhD project has two main foci to be developed with the candidate:

1. Explore how floral resource distribution and ambient temperature affect flower constancy and dietary diversity in bees (honeybees and other social and solitary bees).
2. Investigate the effects of narrow diets on bee health and immunity-relevant genes.

Methods

The candidate will combine controlled experiments with bees visiting both artificial and natural food sources, along with molecular approaches – such as DNA metabarcoding to study diet diversity and qPCR to analyse gene expression.

Team and research environment

The supervisory team includes Dr. Christoph Grüter (behaviour and ecology of honeybees & stingless bees) and Dr. Harry Siviter (bumblebees), Dr. Francisca Segers (bioinformatics), and Dr. Andrés Arenas (University of Buenos Aires; honeybee foraging, cognition and physiology).

The successful applicant will join an international and interactive scientific environment with access to state-of-the-art facilities at the University of Bristol. Bristol is a vibrant city known for its thriving academic community and rich cultural scene. Bristol University has a strong commitment to sustainability and offers excellent opportunities for professional and personal growth in an engaging and supportive environment.

How to apply: Follow the instructions here. For informal enquiries, please contact Dr. Christoph Grüter (c.grueter@bristol.ac.uk).