

**PROJECT TITLE:** Ecological factors driving flower constancy and dietary diversity in bees

**Project Science Theme:** Climate Change and Risk

**Project keywords:** flower constancy, climate change, pollination

**Lead Institution:** University of Bristol

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**Webpage:** <https://www.socialinsect-research.com/>

**Project aims and methods:**

Flower constancy, the tendency of bees to visit one type of flower during a foraging trip, is crucial for plant reproduction and ensures the transfer of pollen to conspecifics. However, this behaviour can reduce foraging efficiency as bees skip rewarding flowers and potentially leads to a narrow diet, which can impair bee health. With changing climates and habitat alterations leading to changing bee foraging landscapes, this project aims to study how environmental change impacts flower constancy. Understanding how, for example, increasing ambient temperatures, flower spatial distribution and floral features affect flower constancy will be crucial for our understanding of how bee nutrition and pollination are impacted by environmental change. The project studies flower constancy and colony diet diversity in social bees (honeybees, bumblebees and stingless bees) using (1) artificial flower arrays, (2) semi-natural setups using purchased flowers, (3) in wildflowers in natural settings and (4) agent-based computer simulations.

The specific factors and floral features to be studied will be developed collaboratively with the student. Possible questions could be how local climate, flower composition and floral features affect flower constancy and bee diet. The outcomes will help us understand the consequences of changing conditions for bee health and pollination.

**Project Collaborative partner:**

**Useful recruitment links:**

For information relating to the research project please contact the lead Supervisor via:

[c.grueter@bristol.ac.uk](mailto:c.grueter@bristol.ac.uk)

**Bristol NERC GW4+ DTP Prospectus:**

<https://www.bristol.ac.uk/study/postgraduate/research/great-western-four-doctoral-training-partnership-nerc/>

**How to apply to the University of Bristol:**

<http://www.bristol.ac.uk/study/postgraduate/apply/>

**The application deadline is Monday 13 January 2025 at 2359 GMT.**