

More than just a pretty flower: how visual patterns guide insect – plant interactions.

We have all experienced the fascinating range of colourful patterns that flowers display – though while merely pleasing to us, they can be of great importance to animals that visit flowers for their daily food supply. Flower patterns are thought to lead insect pollinators to a plant's nectary, expressed in the term 'nectar guides'. I will present recent work on how flower patterns guide the flower interactions of two insect pollinators, the buff-tailed bumblebee (*Bombus terrestris*), and the hummingbird hawkmoths (*Macroglossum stellatarum*). These two species have very different flower-interaction strategies, as bumblebees land on the flowers and make their way to the nectary on foot, while hawkmoths hover in front of them and search for the nectary with their long proboscis. I will provide insights how this guidance function of flower patterns might have shaped innate preferences of pollinators for flower patterns, and how these laboratory pattern preferences translate to flowers visited by these insects in nature, based on citizen science observation data. The talk will thus highlight our work on sensory-motor control, cognitive strategies, and co-evolutionary hypotheses concerning the role of flower patterns in insect-plant interactions.