**General Zoology ‘Project Module’. MSc Projects 2021**

**How efficiently can bumble bees and honey bees transmit viruses to one another? (Robert Paxton)** Honey bees and bumble bees living in the same habitat are often infected with the same viral strain, suggesting that their viruses readily spill over from one species to another, presumably at jointly visited flowers. That is, virus deposited by one bee during feeding at a flower is assumed to be viable and assumed to be transmitted to a following bee that visits the same flower. The aim of this project is to design and run experiments to test some of the assumptions of this route of transmission. **Taken by** **Simon Wogram**

**At what scale do orchid bees respond to anthropogenic change? (Antonella Soro)** Spatial scale is fundamental in understanding species–landscape relationships because responses of species to landscape characteristics typically vary across scales. Many landscapes worldwide are being profoundly affected by human impact (through both urbanization and agriculture intensification), yet the spatial scaling of species responses to these dramatic changes is poorly understood. In this project you will investigate the spatial scaling of anthropogenic effects on the body size of two orchid bee species, collected in Mexico from a gradient of anthropogenic change using GIS and related information to capture data on land use variables at different spatial scales. **Taken by** **Elisa Kathe**

**What are the main environmental drivers of bumble bee parasitism in changing landscapes? (Panas Theodorou)** Land-use change and pathogens pose significant threats to bee health and food security. Pathogen prevalence is influenced by host density and can be mediated by environmental heterogeneity including land-use change. In 2014 we performed a well-replicated urban–rural sampling design in Germany to investigate the effect of land-use change on bees. Here, the student will screen bumble bee individuals for parasites using molecular approaches (qPCR), from our 2014 sampling, belonging to the three most abundant bumble bee species in Germany. The aim of the project will be to disentangle the effects of land-use, local floral resource availability (abundance and richness) and host density on parasite prevalence in a major pollinator group, the bumble bees. **Taken by Karima Bassit**