

OR017*Nutritional homeostasis from individuals to insect societies***David Raubenheimer**, Stephen Simpson

Nutritional homeostasis results from the fine-tuned interactions within a tightly integrated network of behavioural, physiological, morphological and developmental traits. Achieving this is a complicated challenge, given that animals need to ingest a large number of nutrients simultaneously, each at its own particular level. Considering the importance of nutrition for fitness, as well ecological interactions, understanding how animals solve these challenges is a high priority. In recent years an integrative framework, termed nutritional geometry, has been applied to investigate how individuals of a wide range of species solve the challenges of nutritional homeostasis. More complex yet are social animals, such as social insects, where individuals (e.g. foragers) cooperate to provide nutrition for others (e.g. queens and larvae). Only recently, however, have studies begun to investigate nutritional homeostasis in this more complex, group-level, context. In this talk we demonstrate how nutritional geometry has been applied to investigate individual-level homeostasis, and discuss its extension to social species with nutritional division of labour.