Hormones are evolutionary conserved signaling molecules that direct critical actions in development, behaviour and physiology of multicellular organisms. Using the genetic model organisms *Drosophila melanogaster* (fruit fly) and *Tribolium castaneum* (flour beetle), we investigate the mechanisms by which hormones regulate various physiological processes to promote homeostasis.

In this talk, I will present our latest findings on how hormones control systemic osmoregulation in *Tribolium*, and how we may use the insights gained to generate an unprecedented overview of the neuroendocrine control of renal function in beetles.