



BLUMENBACH LECTURE

VORTAGSREIHE DES
JOHANN-FRIEDRICH-BLUMENBACH-INSTITUTS
FÜR ZOOLOGIE UND ANTHROPOLOGIE

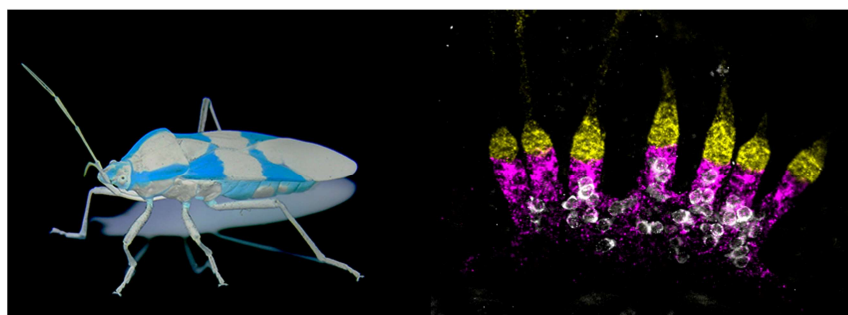
One two three: developmental counting mechanisms in reproductive output and evolution

Prof. Cassandra Extavour

Organismic and Evolutionary Biology, Harvard University, USA

Reproduction is a crucial fitness parameter, essential for species survival and evolution. Despite its importance, there is massive variation in reproductive capacity across animals, even between very closely related species. Our aim is to understand how evolutionary variation in genetic mechanisms gives rise to distinct reproductive capacities between species. Our approach takes advantage of the fact that in sexually reproducing animals, the number of offspring that an individual can produce is often predicted by the anatomy of the ovary or testis, the sites of gamete production. In female insects, ovaries are subdivided into egg-producing units called ovarioles, which are generated in species-specific numbers during development. The correct numbers of these ovarioles are, in turn, regulated by species-specific counting mechanisms that coordinate the morphogenetic behaviors of specific numbers of cells. Ovariole number, and correspondingly reproductive capacity, can vary by more than four orders of magnitude across insects, offering a large landscape of divergence to explore the evolution of counting mechanisms in development. I will discuss our findings on the mechanisms of genetic control of ovariole

number in closely and distantly related insect species, and their implications for broader questions of the genetic and developmental basis of fitness-relevant evolutionary change.



Schwann-Schleiden Forschungszentrum
Julia-Lermontowa-Weg 3, 37077 Göttingen
Raum -1.101

Donnerstag
18. September 2025
12:00 Uhr

Host: Dept. of Evolutionary Developmental Genetics



Please join us for finger food and beverages afterwards