Cologne Evolution Colloquium

SFB 680 Molecular Basis of Evolutionary Innovations

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Cellular mechanisms of mesoderm formation during gastrulation in the cricket *Gryllus bimaculatus*

Gastrulation is a fundamental process required for the formation of various complex organs during animal embryogenesis. In insects, the molecular mechanisms and cellular dynamics of gastrulation have been extensively studied in *Drosophila melanogaster*. In *Drosophila*, the first step in gastrulation is the formation of a ventral furrow, in which invagination accompanied by cell shape changes gives rise to the presumptive mesodermal tissues. However, classical histological studies of insects that branch basally to Holometabola (the Hemimetabola), have reported that a ventral furrow is either absent or weak during the gastrulation process. However, modern studies elucidating the morphogenetic movements and molecular machinery underlying mesoderm formation in these insects are extremely scarce. I seek to address the ancestral insect mechanisms of mesoderm formation during gastrulation and segmentation in the cricket *Gryllus bimaculatus*, which is an emerging model Hemimetabolous insect, by using live-imaging and CRISPR/Cas9-mediated gene modification techniques.

Wednesday, August 16, 2017, 17:00
University of Cologne, Institute for Genetics
Seminar Room 0.46

Hosted by Siegfried Roth