



Funded PhD or Postdoctoral position

Morphogenesis of *Drosophila* metamorphosis

Institut Fresnel, Marseille, France

We are seeking a doctoral or postdoctoral fellow to investigate the biophysical interactions that drive morphogenesis in complex 3D-environments. The candidate will study the interactions between different cell types and tissues within the *Drosophila* pupa at the onset of metamorphosis, focusing on how these interactions lead to the replacement of larval tissues by adult tissues.

The ambitious nature of the project lies in its aim to study morphogenesis in an integrated, multi-tissue context, addressing different scales -- from subcellular cytoskeletal processes to the whole organism. The candidate will benefit from exceptional access to cutting-edge imaging technologies, including customized spinning disc to assess cell dynamics, polarized fluorescence microscopy of actin networks, super-resolution and smart microscopy. The project is being carried out in close collaboration with Philippe Roudot, also at Institut Fresnel, for image analysis.

We are looking for an enthusiastic candidate to join our efforts in multi-tissue morphogenesis. Applicants should have a background in cell and developmental biology, biophysics or a closely related field. Prior experience in *Drosophila* work and live imaging is a plus, but not required.

The project will be based at the Fresnel Institute in Marseille, in the mosaic team (Loïc Le Goff) and in collaboration with the Phyti team (Philippe Roudot). The combination of expertise in biology, optical engineering and data science, provides an ideal setting for cross-disciplinarity.

Interested applicants are invited to submit a letter of interest, a CV, and contact information for two references to Loïc Le Goff (loic.le-goff@univ-amu.fr)

Funding is secured through an ANR grant for the duration of the PhD, and for up to 3 years in case of a postdoctoral fellowship.

Some Recent publications from the lab:

-Debadarshini, et al. (2025). Septins in animal tissue architecture: more than just peanuts. preprint. DOI: 10.13140/RG.2.2.17126.33607

-Rigato, et al. (2024). A mechanical transition from tension to buckling underlies the jigsaw puzzle shape morphogenesis of histoblasts in the *Drosophila* epidermis. PLoS Biol, DOI: 10.1371/journal.pbio.3002662

-Mazzella, et al. (2024). Extended-depth of field random illumination microscopy, EDF-RIM, provides super-resolved projective imaging. Light: science and applications DOI: 10.1038/s41377-024-01612-0.

-Ackermann, et al. (2022) Modeling the mechanics of growing epithelia with a bilayer plate theory. EPJ Plus 137:8. DOI:10.1140/epjp/s13360-021-02205-1

-Abouakil, et al. (2021). An adaptive microscope for the imaging of biological surfaces. Light: science and applications 10, 210 (2021). DOI: 10.1038/s41377-021-00649-9