

Two years postdoctoral position

Laboratoire Jean Perrin, Sorbonne University, Paris, France

Droplets as force sensors at a tissue/tissue interface

The role of mechanical forces in morphogenesis has been extensively studied at the level of single tissues. However, recent work showed that the mechanics of morphogenesis must also be understood in the framework of interacting tissues: neighboring tissues can push or pull on each other, through direct cell/cell contacts or a shared extracellular matrix (ECM), to control their final shape and position in the embryo. Our aim is to investigate how the ECM transmits mechanical forces between adjacent tissues during morphogenetic movements. To tackle this question, the postdoctoral fellow will develop soft matter tools to map out the forces *in vivo* during morphogenesis. In particular, biocompatible emulsion droplets can be used as force sensors in this context. In this project the droplets will be designed to interact with the ECM in order to decipher local forces at play between the olfactory placode and eye tissues in zebrafish embryos.

We are looking for an enthusiastic young researcher (ideally who has recently obtained the PhD diploma, or about to), willing to join an interdisciplinary environment involving interactions between physics (with Lea-Laetitia Pontani, Laboratoire Jean Perrin/Institut de Biologie Paris Seine-IBPS) and biology (with Marie Breaux, Developmental Biology Laboratory/IBPS).

Requirements:

- PhD in biophysics/soft matter
- Knowledge in physico-chemistry & soft matter
- Solid skills in image analysis
- Interest in biomechanics and interdisciplinary work

Additional beneficial skills:

- Skills in experimental interfacing
- Skills in live imaging/confocal microscopy

The position is available from March 2024 onwards and will be funded by the ANR MECAMATRIX grant for 24 months. The fellow will receive full support to apply for further independent postdoctoral fellowships (EMBO, Marie Curie, FRM and others).

To apply, please send your CV including a list of your publications/preprints, a cover letter including the reasons why the position interests you, and two referees or more to:

- Léa Laetitia Pontani (IBPS, Laboratoire Jean Perrin): lea-laetitia.pontani@sorbonne-universite.fr

