

Postdoctoral fellow
VW-funded project “Building the synthetic Drosophila embryo”
- Optogenetic control of tissue mechanobiology -

We are seeking a bright postdoctoral candidate to investigate the control of cell and tissue mechanics via optogenetics in a collaborative project between Maria Leptin (EMBL, Heidelberg, and University of Cologne, Germany) and Vito Conte at the Eindhoven University of Technology (TU/Eindhoven, the Netherlands). The project to research the role of cell cortex contractility in regulating mechanics and morphology of epithelial tissues in vitro is funded by the Volkswagen Foundation for 18 months. The work can be conducted either at the EMBL Heidelberg, or the Institute of Genetics at Cologne University, and at Eindhoven University of Technology.

Job description

The successful candidate will be based in the Leptin Lab. The first stage of the project will focus on engineering an in vitro optogenetic cellular model that can selectively regulate the mechanics of the cellular cortex and its subdomains. Mechanical features of the optogenetic cell model will subsequently be tested at the TU/Eindhoven in the Conte Lab. The in vitro experimental methods involved in this inquiry will include: i) a wide spectrum of molecular and cell biology techniques for the (optogenetical) manipulation of both cellular genotype and phenotype (e.g. plasmid engineering transfection/transduction, selection etc.); ii) advanced microscopy (including epifluorescence, phase contrast and confocal microscopy). To create the new cellular model, the candidate will build on established experimental protocols and optogenetic constructs as well as create new ones.

Job requirements

We are accepting applications from enthusiastic and highly talented PhDs who are interested in a dynamic, stimulating and ambitious environment to perform their research. We are looking for candidates who meet the following requirements:

- A background in molecular and cell biology. Previous experience with optogenetics, microscopy techniques or 2D/3D cell culture will be a distinct advantage, along with competencies in computer-based quantification and analysis of experimental images (Matlab, ImageJ/Fiji or similar).
- Ability to effectively communicate scientific ideas and have a capability for independent thinking.
- Ability to work independently within a dynamic team and be proficient in written and spoken English.

Information

- [Link to the Leptin laboratory;](#)
- [Link to the Conte laboratory;](#)
- [Link to Maria Leptin's webpage;](#)
- [Link to Vito Conte's webpage;](#)