

Postdoc and PHD positions @IGFL

Spatio-temporal control of muscle diversity

We are seeking a motivated PhD student and a postdoctoral researcher in biology and/or bioinformatics to investigate the molecular and cellular logic underlying the generation of muscle diversity during development. Our work uses *Drosophila* and mouse models to address these questions at both the cellular and molecular level.

Our approach

To achieve our goals, we combine single-cell and single-nucleus sequencing with an innovative 3D spatial transcriptomics methodology to unravel the gene networks regulating muscle morphogenesis. We employ cutting-edge computational and data analysis methods to reconstruct single-cell and single-nucleus sequencing clusters in space and time.

Using state-of-the-art genetic tools, we aim to elucidate the functionality of these gene networks by visualizing and selectively modifying the genotypes of myoblasts and muscles during development. The effects of these manipulations on muscle architecture will be studied with advanced microscopy, while locomotion dynamics will be analyzed through behavioral assays. Finally, we will determine whether these gene networks act cell-autonomously or are regulated by extrinsic signals, such as morphogens, by leveraging the powerful genetic toolkit of *Drosophila*.

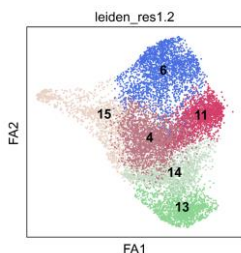
The environment

Our lab is based at the IGFL (Institut de Génomique Fonctionnelle de Lyon), which fosters an outstanding international research environment at the interface of evolution, development, and integrative physiology, using functional genomics, bioinformatics, genetics, and comparative approaches. The institute is housed in a modern building at the École Normale Supérieure (ENS) de Lyon, within the vibrant research community of the Lyon Gerland campus. Candidates will have access to exceptional facilities for single-cell sequencing, spatial transcriptomics, and advanced microscopy (3D STED, confocal, etc.). Lyon, known as the "gastronomic capital" of France, is a dynamic city with a rich cultural and sports scene. It is also an international transportation hub (<2h from Paris or Marseille by high-speed train, 1h drive from the Alps).

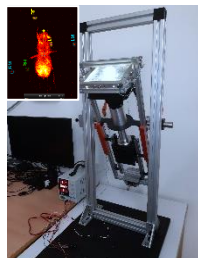
Desired skills

- Developmental biology
- Molecular biology
- Genetics
- Experience in single-cell sequencing (a plus)
- Experience in spatial transcriptomics (a plus)
- Knowledge of gene network analysis (a plus)
- Bioinformatics expertise (a plus)

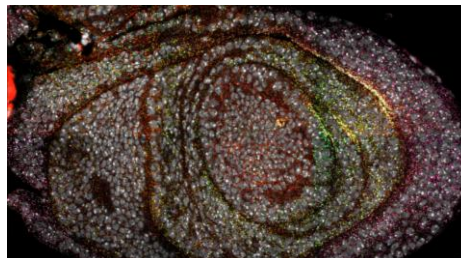
Instructions for applicants: Applications should include a CV, a cover letter, and contact details for 3 referees to be sent to: Jonathan Enriquez (jonathan.enriquez@ens-lyon.fr). Please use the email subject "Morpho"



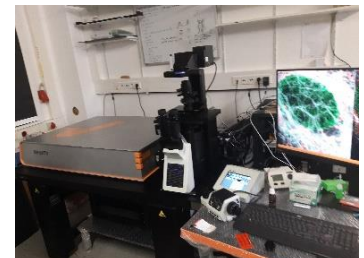
Single cell Seq



Flywalker



3D spatial transcriptomic



3D STED microscopy