



Institut de Génomique Fonctionnelle de Lyon  
Team: Function and Development of Neuromuscular System  
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## Master student position available from January 2021

We aim to **recruit M2 students** (funded on ANR grant) who wish to pursue a PhD. Position will be opened from January 2021 with a flexible starting date. At the end of the internship (6 months) the candidate will apply to the doctoral school BMIC (<https://edbmic.universite-lyon.fr>) or will be funded by the lab (ANR funding). Our Lab is located at the IGFL (<http://igfl.ens-lyon.fr/>) which was recently created at the École Normale Supérieure de Lyon, the CNRS and the University of Lyon to foster projects that lie at the **interface of animal development, physiology and evolution.**



### **Bridging the gap between development and maintenance of the locomotor system: from genes to function**

Locomotion is a stereotyped behavior used by animals to find food, mates or to escape from predators. As Michel De Montaigne said: *'life is only movement'*. The rhythmic pattern of locomotion is directly linked to the sophisticated architecture of the locomotor system. Its architecture is built during development and maintained during adulthood. The long-term project of my team is to understand how locomotor systems acquire and maintain their specific architecture.

Our multiscale project encompasses the fields of molecular, cellular and developmental biology and physiology. Our project integrates experiments from molecules to cells and from system architecture to behavior. Our favorite animal model is *Drosophila melanogaster*.

The lab is organized around 3 objectives:

**Objective 1: Development of Motoneurons.** We want to know how a stem cell generate motoneurons of different morphologies during development.

**Objective 2: Development of muscle innervation.** We want to understand how two tissues communicate during development to construct a system.

**Objective 3: Development and Maintenance of muscle innervation.** We want to know if the gene networks necessary for the establishment and maintenance of muscle innervation are the same.

If you want to learn molecular biology, transgenesis, Fly genetic, smFISH, image analysis and behavior please contact us! Please submit a CV, names of at least 2 referees, a statement of past achievements and future research interest to Jonathan Enriquez: [jonathan.enriquez@ens-lyon.fr](mailto:jonathan.enriquez@ens-lyon.fr).

### **Selected publications**

1. Babski, H., Jovanic, T., Surel, C., Yoshikawa, S., Zwart, MF., Valmier, J., Thomas, JB., **Enriquez, J.**, Carroll P, Garcès, A. A GABAergic Maf-expressing interneuron subset regulates the speed of locomotion in *Drosophila*. **Nat Commun.** 2019 Oct 22;10(1):4796.
2. Guan, W., Venkatasubramanian, L., Baek, M., Mann, R.S., and **Enriquez, J.** (2018). Visualize *Drosophila* Leg Motor Neuron Axons Through the Adult Cuticle. **corresponding author. J. Vis. Exp. JoVE.**
3. **Enriquez, J.**, Rio, L.Q., Blazeski, R., Bellemin, S., Godement, P., Mason, C., and Mann, R.S. (2018). Differing Strategies Despite Shared Lineages of Motor Neurons and Glia to Achieve Robust Development of an Adult Neuropil in *Drosophila*. **Co- corresponding author. Neuron** 97, 538–554.e5.
4. **Enriquez, J.**, Venkatasubramanian, L., Baek, M., Peterson, M., Aghayeva, U., and Mann, R.S. (2015). Specification of individual adult motor neuron morphologies by combinatorial transcription factor codes. **Co- corresponding author. Neuron** 86, 955–970.

