MeLiS, Institut NeuroMyoGène

Three-years Post-doctoral position
Starting date: March 2022

Castellani laboratory,
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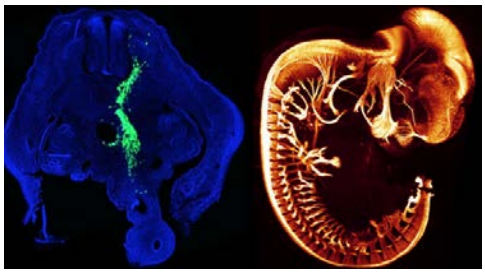

Project: Childhood malignancies of the nervous system: exploring the dissemination of tumoral cells in light of the mechanisms of the embryonic development

We are looking for a highly motivated post-doc to join us on a project at the interface of developmental biology and childhood cancerology. Our lab is interested in understanding the mechanisms providing topographic landmarks to migrating cells and axons during the wiring of the nervous system. In parallel we study how childhood cancers with embryonic occurrence take advantage of the mechanisms of the embryonic neuro-development, with a focus on the metastatic dissemination. We are mainly working on neuroblastoma, a pediatric cancer that arises from a transitory embryonic cell population, the neural crest. We developed an *in vivo* model consisting in implanting human malignant cells at the site of the neural crest origin in the chicken embryo (Delloye-Bourgeois *et al*, Cancer Cell, 2017). Combined with different types of imaging (videomicroscopy, light sheet confocal microscopy) and transcriptomic approaches, it allowed us to characterize various cellular and molecular dialogs between malignant cells and their embryonic environment. We recently extended our approaches to study another pediatric cancer, the medulloblastoma.

The project aims at characterizing shared and unshared behaviors of malignant cells with their cells of origin labeled by specific fluorescent reporters, focusing on migratory processes. The objectives are to compare cell behaviors using imaging techniques and transcriptomic analyses to identify signaling pathways governing the pathfinding strategies of malignant cells during their dissemination.

MeLiS is composed of seven teams using a diversity of models, from c elegans, zebrafish, drosophila, chicken and mouse, and addressing biological questions at the molecular, cellular and organism levels. We share strong interest for cell biology and imaging approaches. The NeuroMyoGene Institute is located at the core of hospitals and research centers in cancerology and neuroscience, in a living place accessible by public transport, at 10 min from the heart of the city.

We invite candidates with the following profiles to apply:
-Acquired skills in developmental biology, *in vivo* manipulations and molecular biology, imaging. Knowledge of the chicken embryo model would be a great plus.
or
-Acquired skills in transcriptomic approaches (single cell RNAseq and data analysis) applied to developmental biology and/or cell lineage studies.

We wish to recruit a post-doc with excellent interpersonal and communication skills, good work ethics, strong motivation and creativity. Fluency in English is mandatory but ability to speak French is not required. The project is funded by a grant from ARC (Association pour la recherche sur le Cancer) to the lab, for 3 years. Salary will depend on previous experience. Applications should contain a CV, a letter of motivation with a description of research accomplishments and the contact information of two references to valerie.castellani@univ-lyon1.fr.