

Université Claude Bernard Lyon 1- Hosting offer for a MSCA Post-doctoral fellowship candidate in 2026

Host Organisation	Université Claude Bernard Lyon 1
Department	Life Science
Laboratory	MeLiS - UCBL-CNRS UMR 5284 - INSERM U1314
Website (lab / research team)	https://inmg.fr/melis/fr/team_castellani.php
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Host Organisation

The Université Claude Bernard Lyon 1 welcomes Marie Skłodowska Curie Postdoctoral Fellowships applications !

With 62 laboratories and more than 7000 publications per year, and leading French university in terms of the number of patents filed in collaboration with industry, Lyon 1 contributes to scientific and innovation progress in numerous fields: health, mathematics, IT, physics, chemistry, earth and space sciences, life sciences, etc. Creator of emerging knowledge and new technologies, the University is consolidating its research excellence on a global and international level by developing inter- and multidisciplinary approaches targeting the major challenges facing today society.

Host research lab/team

The Laboratoire MELIS is a leading research lab in Europe in Mechanisms in Integrated Life Sciences

MeLiS teams are interested in the molecular mechanisms operating in a variety of cellular compartments, from cilia, membranes, axons, to synapses and circuits, with a focus on neuronal and muscular cells. We investigate a range of biological processes and their alterations in human diseases affecting developing, adult and aging organisms. We use a diversified approach taking advantage of a large panel of models, including: drosophila, C. elegans, zebrafish, chicken, mouse, and human. Our studies combine genetics, large-scale molecular analyses, in vivo manipulations, behavioral assays, with strong emphasis on microscopy techniques (super-resolution microscopy, expansion microscopy, in vivo 2-photon, light sheet microscopy, electron microscopy) and image quantification (segmentation, animal tracking, time-series).

The Valérie Castellani research team (20 people) : Embryonic neuro-development and childhood cancers – ERC synergy 2024.

Our laboratory studies the cellular and molecular mechanisms that control the formation of the nervous system in the embryo. We are interested in the communication of progenitor and neuronal cells with their environment, with a focus on the cellular processes and molecular signaling that control the colonization of embryonic territories by migrating neural cells and axons. We are currently addressing these questions by studying a remarkable embryonic cell population, the neural crest, at the origin of multiple derivatives, including the sympathetic chain, adrenal medulla, and enteric

nervous system. Using experimental manipulations in the avian embryo model and transcriptomics, we study the emergence of enteric neural circuits and brain-gut connectivity to characterize the gene programs that mediate communication between cells and their environment. We are investigating whether these programs are conserved in the human embryo and whether their deregulation might contribute to gut neurodevelopmental disorders.

In parallel, we study pediatric cancers in the light of their embryonic origin, in particular neural crest derived neuroblastoma and cerebellar precursor-derived medulloblastoma. The heterogeneity and plasticity that characterize these malignancies and underlie their aggressiveness are thought to be rooted in the embryonic context of their emergence. Tumorigenic events take place in cells that actively communicate with their environment and are endowed with the proliferative and migratory properties necessary for tissue formation.

While becoming malignant, tumoral cells retain many of the characteristics of the cells of origin. Our goal is to understand how during tumorigenesis and metastasis this dual physiological and tumorigenic potential is manifested by the opportunistic exploitation or hijacking of developmental mechanisms and signaling pathways. This basic research will pave the way for the development of therapies that specifically target tumor-specific behavior and signaling. To address these questions, and taking advantage of our developmental biology models, we have established a specific *in vivo* paradigm that recapitulates the embryonic context for malignant cells. It consists of transplanting human tumor cells into selected tissues of the avian embryo. Our studies are based on a multi-approach strategy combining experimental embryology, functional studies of genes of interest in avian models, 3D light sheet microscopy to map cells and molecules at the whole embryo level, videomicroscopy, and large-scale transcriptomic analyses.

Animation presenting our research on pediatric cancers <https://youtu.be/Or4w1i30Z4w>

Hosting Offer

The **V. Castellani lab and specifically, the group led by Servane Tauszig Delamasure, research director, on Medulloblastoma** offers to host a MSCA Postdoctoral Fellowship candidate (typically a post-doc of less than 8 years research experience since PhD defence), submitting an application to the next MSCA-2026-PF call for proposals (deadline 09th of September 2026), interested to work on the following research topic:

Studying and modeling the tumorigenesis and the metastatic dissemination of a pediatric cancer, medulloblastoma.

Medulloblastoma is a cancer affecting children and teenagers. It results from alterations occurring during cerebellar development in the embryo. 1/3 of patients display metastasis at diagnosis: tumoral cells navigate in the cerebro-spinal fluid and invade meninges along the spinal cord and the cerebral hemispheres. Our hypothesis is that tumoral cells hijack developmental mechanisms during this process.

In the aim of characterizing these mechanisms, our experimental approach consists in grafting cell lines and patient's fluorescent tumoral cells in an embryonic context: the

chick embryo. By innovative microscopy technics (clearing coupled with light-sheet microscopy), we observe the formation of a primary tumor and metastatic dissemination. We combine these studies with transcriptomic approaches ((Spatial and Single cell - RNAseq) and in vitro cell culture to characterize the developmental mechanisms misled by tumoral cells

Understanding these mechanisms should help us to better treat the children and reduce their long-term sequelae.

The fellowship could last for 12 to 36 months, depending on the type of Postdoctoral Fellowship.

Supervision

The successful Marie-Curie Post-doctoral fellow will be supervised by Servane Tauszig-Delamasure <https://www.linkedin.com/in/servane-tauszig-delamasure-51610360/>

Application process

Interested candidates are invited to contact us exclusively by email at servane.tauszig-delamasure@univ-lyon1.fr

Make sure that you include the reference to this offer in the title of your email. Please attach a CV, a motivation letter, your MSc marks, **as well as a 1 page research proposal**.

Professional grant application support:

Candidates will receive the support of the supervisors, as well as online training from a professional grant application company, and advices from successful applicants, to prepare and submit their application with the MELIS lab as a host laboratory, to the next MSCA-PF call for proposals.