

Université Claude Bernard Lyon 1

Joint Hosting Offer for a MSCA Postdoctoral Fellowship Candidate in 2026

Host Organisation

Host Organisation	Université Claude Bernard Lyon 1
Department	Life Sciences
Laboratories	MeLiS - UCBL-CNRS UMR 5284 - INSERM U1314
Website	https://melis-lyon.fr

Joint Supervision Team

	Principal Supervisor	Co-Supervisor
Name	Dr. Ludovic Telley	Dr. Servane Tauszig-Delamasure
Position	DR INSERM	DR CNRS
Expertise	Computational neuroscience, single-cell RNA-seq analysis, cerebellar development	Pediatric brain cancer (medulloblastoma), avian embryo models, developmental oncology
Email	ludovic.telley@univ-lyon1.fr	servane.tauszig-delamasure@univ-lyon1.fr
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About Université Claude Bernard Lyon 1

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

With 62 laboratories and more than 7,000 publications per year, and as a leading French university in terms 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, and life sciences. 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's society.

Host Research Laboratory

The Laboratoire MeLiS (Mechanisms in Integrated Life Sciences) is a leading European research institute investigating molecular mechanisms operating across cellular compartments—from cilia, membranes, and axons to synapses and circuits—with a focus on neuronal and muscular cells. We investigate biological processes and their alterations in human diseases affecting developing, adult, and aging organisms.

Our studies combine genetics, large-scale molecular analyses, in vivo manipulations, and behavioral assays, with strong emphasis on advanced microscopy techniques (super-resolution, expansion microscopy, in vivo 2-photon, light-sheet, electron microscopy) and computational image quantification.

Research Teams

Telley Group: Computational Neuroscience & Cerebellar Development

The Telley group specializes in understanding brain development through cutting-edge single-cell transcriptomics and computational approaches. Our expertise includes:

- Single-cell RNA-sequencing (scRNA-seq): From sample preparation to advanced bioinformatic analysis
- Cerebellar development: Characterization of neuronal progenitor diversity and lineage trajectories
- Computational pipelines: Development of analytical tools for trajectory inference, gene regulatory network reconstruction, and spatial transcriptomics integration
- Multi-omics integration: Combining transcriptomic, epigenomic, and spatial data to build comprehensive developmental atlases

We leverage state-of-the-art platforms including 10X Genomics Chromium, spatial transcriptomics (Visium, MERFISH), and custom computational pipelines built in R (Seurat, Monocle) and Python (Scanpy, scVelo).

Castellani Team: Embryonic Neurodevelopment and Childhood Cancers (ERC Synergy 2024)

The Valérie Castellani research team (20 members), including the Tauszig-Delamasure group, studies the cellular and molecular mechanisms controlling nervous system formation in the embryo. Our focus areas include:

- Neural crest biology: Migration, colonization of embryonic territories, and emergence of enteric neural circuits
- Pediatric cancers: Understanding medulloblastoma and neuroblastoma through the lens of their embryonic origins
- Innovative in vivo models: Transplantation of human tumor cells into avian embryos to recapitulate the developmental context
- Advanced imaging: 3D light-sheet microscopy, clearing techniques, and whole-embryo mapping

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

Joint Research Project

Deciphering Medulloblastoma Development and Metastasis through Single-Cell Multi-Omics and Developmental Modeling

Scientific Context

Medulloblastoma is a devastating pediatric brain cancer arising from alterations during cerebellar development. One-third of patients present with metastases at diagnosis, where tumor cells navigate through the cerebrospinal fluid and invade meninges along the spinal cord and cerebral hemispheres. Our central hypothesis is that tumor cells hijack developmental mechanisms during tumorigenesis and metastatic dissemination.

Project Objectives

This joint fellowship project uniquely combines:

1. Wet-lab expertise (Tauszig-Delamasure/Telley):

- Grafting medulloblastoma cell lines and patient-derived fluorescent tumor cells into chick embryos
- Generating samples for single-cell and spatial transcriptomics (Chicken and Mouse)
- Advanced imaging (clearing + light-sheet microscopy) to observe primary tumor formation and metastatic spread (Chicken and Mouse).
- In vitro cell culture and functional validation.

2. Dry-lab expertise (Telley):

- Single-cell and spatial RNA-seq data analysis (Human, Chicken, Mouse, Organoids)
- Trajectory inference to map tumor cell state transitions
- Comparison with normal cerebellar development atlases
- Identification of hijacked developmental gene programs
- Construction of gene regulatory networks driving metastasis

Expected Outcomes

- Comprehensive single-cell atlas of medulloblastoma development in an embryonic context
- Identification of developmental pathways exploited by tumor cells
- Novel therapeutic targets based on tumor-specific developmental signatures
- Computational tools for integrating developmental and cancer transcriptomics

Impact: Understanding these mechanisms will contribute to improved treatments for children with medulloblastoma and reduction of long-term sequelae.

Candidate Profile

We are seeking a highly motivated postdoctoral researcher with a hybrid wet-lab/dry-lab profile:

Essential Qualifications

- PhD in neuroscience, developmental biology, cancer biology, or a related field
- Hands-on experience in single-cell RNA-seq sample preparation: tissue dissociation and cell isolation, library preparation (10X Genomics Chromium or equivalent platforms), quality control and troubleshooting
- Strong publication record in peer-reviewed journals

Highly Desirable Skills

- Bioinformatic analysis of scRNA-seq data using R (Seurat, Monocle, SingleCellExperiment) or Python (Scanpy, scVelo, CellRank)
- Experience with spatial transcriptomics analysis
- Familiarity with trajectory inference and RNA velocity methods
- Basic programming skills (R and/or Python)
- Experience with cell culture and histology

Additional Assets

- Experience with avian embryo models or in vivo tumor transplantation
- Knowledge of cerebellar development or medulloblastoma biology
- Experience with microscopy techniques (light-sheet, confocal)
- Interest in developing new computational methods

Personal Qualities

- Ability to work at the interface of experimental and computational biology
- Strong communication skills in English
- Enthusiasm for collaborative, interdisciplinary research
- Independence and scientific creativity

Fellowship Details

Duration	12 to 36 months (depending on fellowship type)
Call	MSCA-2026-PF
Deadline	9 September 2026
Location	Lyon, France (MeLiS laboratory)

What We Offer

- Dual mentorship: Benefit from complementary expertise in computational and experimental approaches
- State-of-the-art facilities: Access to single-cell platforms, imaging core, and high-performance computing
- International environment: Integration into a dynamic team of 20+ researchers
- Career development: Training in both wet-lab and dry-lab methodologies
- Professional support: Grant writing workshops and support from successful MSCA alumni
- Vibrant scientific ecosystem: Lyon is a major European hub for life sciences with excellent quality of life

Application Process

Interested candidates are invited to contact both supervisors by email:

- Dr. Ludovic Telley: ludovic.telley@univ-lyon1.fr
- Dr. Servane Tauszig-Delamasure: servane.tauszig-delamasure@univ-lyon1.fr

Email subject: MSCA-PF 2026 Application - Your Name

Please include:

1. Curriculum Vitae (including publication list)
2. Motivation letter explaining your interest in the project and your hybrid wet-lab/dry-lab experience
3. Academic transcripts (MSc and PhD)
4. 1-page research proposal outlining your vision for the project
5. Contact information for 2-3 references

Professional Grant Application Support

- Direct supervision and mentoring from both PIs
- Online training from a professional grant application company
- Advice and feedback from previous successful MSCA applicants
- Access to institutional resources for proposal preparation

Why Join Us?

This position offers a unique opportunity to:

- Bridge experimental oncology and computational biology
- Work on a clinically relevant question (pediatric cancer) with direct translational potential
- Develop a rare combination of skills highly valued in both academia and industry
- Join a newly funded ERC Synergy project (2024) at the forefront of developmental cancer research
- Publish in high-impact journals and build an independent research profile

We welcome applications from candidates of all backgrounds and are committed to creating an inclusive research environment.

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