POST-DOCTORAL POSITION

VISION INSTITUTE – PARIS – FRANCE

DEPARTMENT OF DEVELOPMENTAL BIOLOGY

The Team "Mechanism of Sensory Map Development" led by X. Nicol and C. Fassier at the Vision Institute (Paris, France) is seeking a postdoctoral fellow. The Vision Institute is part of Sorbonne University, CNRS and Inserm and offers a highly multidisciplinary environment with teams active in fields ranging from theoretical neuroscience and developmental neurobiology to the development of innovative therapeutics for vision disorders.

Our team investigates the cellular and molecular mechanisms that shape neuronal connectivity with a special focus on visual and motor circuit wiring. We are particularly interested in deciphering the role of cytoskeleton-associated proteins in healthy and pathological development of neuronal circuits and their contribution in linking developmental defects to neurodegeneration. The candidate will join a multidisciplinary project aiming at investigating the role of spastin, a microtubule-severing enzyme incriminated in degenerative conditions of corticospinal tracts, in the wiring of neuronal circuits. The project will focus on corticospinal axon guidance/connectivity. The successful candidates will use an original combination of biological systems and cutting-edge imaging technologies to dissect the role of spastin in corticospinal tract development at molecular, cellular and circuit scales. This project further aims at identifying key regulators of spastin activity in developing cortical neurons, which could represent attractive therapeutic targets to boost spastin activity and prevent or delay the axonal degeneration caused by spastin haploinsufficiency.

The candidate will work in close collaboration with other lab members investigating the role of other microtubule-destabilizing enzymes in visual circuit wiring and using similar pluri-disciplinary approaches. The project led by the candidate will be developed in close collaboration with experts in anatomical and functional analysis of brain connectivity using multi-modal MRI and ligthsheet imaging as well as with in vitro cell-free system specialists to study cytoskeleton dynamics.

The successful applicant should hold a PhD in neuroscience or cell biology. Previous experience in cell biology and advanced microscopy is highly recommended. Experience on the cytoskeleton and in vitro cell-free systems is very welcome but not required. The candidate is expected to work independently for the design and realization of experiments and to be actively involved in the collaborative network. Fluency in English is mandatory but ability to speak French is not required.

The position is funded for 2 years from now and further extension is possible. Applications should be sent to Coralie Fassier (coralie.fassier@inserm.fr) and should include a statement of research accomplishments and interests, a CV and the contact information of three references.

Nicol&Fassier lab website : http://xaviernicol.toile-libre.org/

Selected relevant publications:

- Martin DT, Jardin N, Giudicelli F, Gasmi L, Vougny J, Haumaitre C, Nicol X, Janke C, **Fassier C*** and Hazan J*. (2022). A key role for p60-Katanin in axon navigation is conditioned by the tubulin polyglutamylase TTLL6. ***BioRxiv***. (* equal contribution).

- Atkins M, Gasmi L, Bercier V, Revenu C, Del Bene F, Hazan J and **Fassier C**. (2019). Fignl1 associates with kif1bβ and bicd1 to restrict dynein transport velocity during axon navigation. ***J Cell Biol***. 218(10):3290-3306.
- Jardin N, Giudicelli F, Ten Martín D, De Gois R, Allison R, Houart C, Reid E, Hazan J and **Fassier C**. (2018). Bmp- and neuropilin-1-mediated motor axon navigation relies on spastin alternative translation. ***Development***. 145(17).
- **Fassier C**, Fréal A, Gasmi L, Delphin C, Ten Martin D, De Gois S, Tambalo M, Bosc C, Mailly P, Revenu C, Peris L, Bolte S, Schneider-Maunoury S, Houart C, Nothias F, Larcher JC, Andrieux A, Hazan J. (2018). Motor axon navigation relies on Fidgetin-like 1-driven microtubule plus end dynamics. ***J Cell Biol.*** 217:1719-1738.