

## Postdoctoral Research position in Developmental Neurobiology and Genetics

Applications are invited for a postdoctoral research position to study “*the epigenomic landscape of asymmetric divisions in the developing vertebrate nervous system*” in the “[Cell Division and Neurogenesis](#)” group led by X. Morin at [IBENS](#).

During development of the vertebrate central nervous system, neural progenitors first undergo a phase of expansion through symmetric divisions, and then switch to a neurogenic asymmetric mode of division, which allows the maintenance of a pool of progenitors while producing mature neural cells. The balance between both modes of division is crucial in the production of adequate numbers of neurons, and deregulation has been linked to diseases such as microcephaly and pediatric tumors. Remarkably, the transition from symmetric to asymmetric divisions is progressive, and both types of progenitors coexist at the same developmental stage, raising the question of the choice between these modes of division. The project will capitalize on the known differential expression of the Tis21 transcription factor to decipher the molecular determinants of this decision. Using knock-ins of fluorescent reporters in mouse ES cells, the work will involve the production of pure populations of neural progenitors undergoing proliferative (symmetric) versus neurogenic (asymmetric) divisions, and the differential analysis of their epigenomic and transcriptional state. Our goal is to identify new signaling and/or metabolic pathways potentially involved in the transition from proliferation to neurogenesis. In a second phase of the project, we will validate functionally these candidates *in vivo*.

The position is initially funded for one year by the [Foundation Simone & Cino del Duca](#), with possibilities of extension from other funding sources. Candidates are also expected to apply for competitive national and international funding sources.

IBENS (<http://www.ibens.ens.fr/>) is a multidisciplinary research center in Biology with 30 research groups and more than 300 staff members. Research fields cover cell and developmental biology, neuroscience, ecology/evolution, functional genomics and biophysics. Located on the "Montagne Sainte Geneviève", a very active research area in Paris center, it benefits from collaborations and seminars from nearby Institutes (Institut Curie, IPGG, ESPCI and Collège de France).

Applicants should hold a PhD degree in a relevant subject area and hands-on expertise in mouse ES cell culture and/or techniques for chromatin studies (e.g. ChIP-seq, ATAC-seq, etc...). Experience with live cell imaging and bioinformatics would be advantageous.

To apply, send a CV, a cover letter and the name of two referees to Dr Evelyne Fischer ([fischer@biologie.ens.fr](mailto:fischer@biologie.ens.fr)) or Dr Xavier Morin ([xavier.morin@ens.fr](mailto:xavier.morin@ens.fr)).

### Recent key publications from the group:

di Pietro F et al (2016) *EMBO Reports*, 17(8):1106-1130.  
Saadaoui M et al (2014) *J Cell Biol*, 206(6):707-717.  
Loulier K et al (2014) *Neuron*, 81(3):505-520.  
Tozer S & Morin X (2014) *Science*, 343 (6167):146-147

Massa F et al (2013) *Development*. 140(4):886-96  
Morin X & Bellaïche Y (2011) *Dev Cell*, 21(1):102-119  
Peyre E et al (2011) *J Cell Biol*. 193(1):141-54.