

Postdoctoral position in Neurodevelopment and Epilepsy – Paris, France

A fully funded 36-month postdoc position is open immediately in the Poncer laboratory at the Institut du Fer à Moulin, Paris, to study the cellular determinants of epileptic networks associated with focal cortical dysplasia. This ANR-funded collaborative project brings together 3 leading European groups in the fields of neurodevelopment and epilepsy (Stéphanie Baulac at ICM and Jean Christophe Poncer at IFM, Paris, and Denis Jabaudon at Univ. Geneva).

Cortical malformations are a major cause of childhood epilepsy and are often caused by germline mutations but also by somatic mutations affecting only a subset of neurons. Such *brain mosaicism* is implicated in several neurodevelopmental disorders and cortical malformations, including focal cortical dysplasia (FCD), which is the most common developmental malformation causing refractory epilepsy. Our project aims **to understand how FCD promotes epilepsy**. Specifically, we will explore the molecular and circuit basis of cortical malformation and epileptogenesis in FCD. By combining single-cell transcriptomics and electrophysiological studies on postoperative tissue from human CFD patients and a clinically relevant mouse model, we will functionally interrogate specific molecular pathways and cell subtypes and their contribution to circuit hyperexcitability.

The successful candidate will join a dynamic, multidisciplinary research team focused on the molecular and cellular determinants of epileptic networks, with expertise ranging from single molecule tracking approaches to *in vitro* and *in vivo* electrophysiology. He/she will perform *in vitro* electrophysiological recordings (patch-seq combined with LFP) from postoperative human brain tissue and brain slices from animal FCD models to correlate pathological network activity with single-molecule electrophysiological and transcriptomic signatures. He/she will also participate in consortium activities including annual scientific meetings, progress reports, and interaction with patient organizations for outreach activities.

Candidates should have a PhD in neuroscience and a strong background in *in vitro* slice electrophysiology (patch clamp). Excellent teamwork and communication skills in English are required.

To apply, please send a CV, a brief description of experience and research interests, and the names and email addresses of two references to jean-christophe.poncer@inserm.fr.

The Institut du Fer à Moulin is a research center affiliated with Inserm and the Sorbonne University, located in the heart of the Latin Quarter in Paris. It hosts 8 research teams on neurodevelopment and nervous system disorders and 3 state-of-the-art experimental platforms for photonic microscopy, cell engineering and behavioral exploration. (www.ifm-institute.fr)