



Interdisciplinary Institute for Neuroscience  
Université de Bordeaux, CNRS – UMR 5297

### **Title:**

Seeking an engineer to develop light-sheet microscopy for neurosciences applications.

### **Project description**

Light Sheet Fluorescence Microscopy technics (LSFM) have proven to be extremely efficient for 3D imaging of biological samples at various spatial and temporal scales with minimal photo-damaging effects. Several solutions have been developed in the field of neuroscience to image samples ranging from fixed whole brains, to single dissociated neurons growing on a coverslip. In this regard, the Interdisciplinary Institute for Neuroscience (IINS) and the Bordeaux Imaging Center (BIC) are equipped with 3 complementary LSFM techniques: (1) [an ultramicroscope](#) for whole brain imaging; (2) a [Lattice Light Sheet Microscope](#) (LLSM) to image the first layers of brain slices at high spatial resolution; (3) a home-made single objective selective plane illumination microscope (soSPIM) dedicated to 3D cell cultures and in-depth single-molecule localization microscopy (SMLM).

We aim to complete our catalog by implementing a solution based on the Oblique Plane Microscopy (OPM) architecture, which will be dedicated to fast neuronal samples imaging, ie. brain slices, equipped with local photo-manipulation and possibly other recording modalities.

### **Missions:**

The candidate missions will be: i) to develop a custom OPM to address specific neurobiological questions, and ii) to participate to the improvement of existing light-sheet microscopes in close collaboration with developers and neuroscientists.

### **Candidate profile:**

We seek a motivated, enthusiastic and independent candidate, with an interest in neuroscience and a strong expertise in optics and fluorescence microscopy. Complementary skills in programming and sample preparation are appreciated. The candidate will work in an English-speaking environment, in close interactions with the neuroscientists' team of the [Bordeaux's Neurocampus](#).

### **Environment:**

The candidate will be hosted in the [Quantitative Imaging of the Cell](#) team, a R&D team with an internationally-recognized expertise live cell microscopy and quantitative analysis.

The [Bordeaux Imaging Center](#) is an imaging platform with a department dedicated to photonic microscopy for biology. It is equipped with several advanced fluorescence microscopy systems (Confocal, STED, SMLM, LLSM, ...). The BIC and IINS are hosted in the same building, a recent neuroscience research center located on the Carreire campus of the Bordeaux University.

The [Interdisciplinary Institute for Neuroscience](#) is an international level research center in neurosciences. It gathers 14 teams with complementary and interdisciplinary expertise, as well as several platforms to address cutting-edge questions in various aspects of neurosciences.

### **Contract:**

A 3 years research engineer position is available in the framework of the French "Grands Programmes de Recherche" **BRAIN** awarded to the Bordeaux Neurocampus.

Applicants should send a CV, a motivation letter and contact details for at least two referees to:

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