

Dr. Jean-Baptiste Sibarita
Group leader
Quantitative Imaging of the Cell
Tel: +33 (0) 533514706
jean-baptiste.sibarita@u-bordeaux.fr

Looking for a Master 2 student position at IINS Bordeaux “3D live imaging of brain spheroid development”

Keywords: Spheroids, 3D live imaging, Lightsheet microscopy

Project Description:

The rapid advent of in vitro organoid development has opened countless new opportunities in understanding the biology of human organ development, and has very strong potentials in many fields. However, despite the extensive evolution of microscopy techniques, simple 3D live imaging methods compatible with high-throughput constraints and organoids growth requirements are still lacking.

The Quantitative Imaging of the Cell team @ Interdisciplinary Institute for Neurosciences (IINS-Bordeaux, France) is seeking to recruit a Master 2 student at the interface between biology, programming and optical microscopy to implement a screening platform to monitor brain organoid development. The student will be hosted in Bordeaux and will be involved in a collaborative project with the laboratory Biomechanics of cell-cell contacts at Singapore (NUS, Singapore). This interdisciplinary project aims at combining innovative 3D live imaging^{1,2} with organoids growth in controlled artificial microniches³ with the goal to provide a molecular, cellular and biomechanical insight on brain organoid development.

The proposed project is highly interdisciplinary which ensures that the candidate, with a background in physics or biology, will be able to work on the parts that suit the best his qualifications (optics, image analysis, bioengineering). This project will be followed by a PhD thesis co-supervised by JB. Sibarita in Bordeaux and Virgile Viasnoff in Singapore, providing the student to a strong exposition to international level researches willing to develop cutting-edge approaches in the growing field of organoids and high content 3D imaging.

French partner: Quantitative Imaging of the cell, JB. Sibarita, IINS, Bordeaux – UMR5297

International Partner: Biomechanics of cell-cell contacts, V. Viasnoff, MBI, Singapore – UMI3639

References:

1. Singh, A. P. et al. 3D protein dynamics in the cell nucleus. *Biophys. J.* 112, 133–142 (2017).
2. Galland, R. R. et al. 3D high- and super-resolution imaging using single-objective SPIM. *Nat. Methods* 12, 641–644 (2015).
3. Stoecklin, C. et al. A New Approach to Design Artificial 3D Microniches with Combined Chemical, Topographical, and Rheological Cues. *Adv. Biosyst.* 2, 1700237 (2018).

Contacts:

If you are interested, please send a CV with a motivation letter to:
Jean-Baptiste Sibarita: jean-baptiste.sibarita@u-bordeaux.fr
Rémi Galland: remi.galland@u-bordeaux.fr