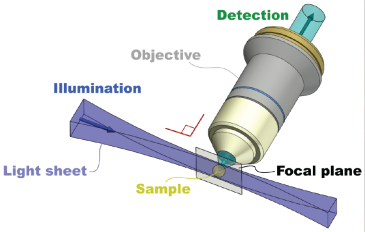
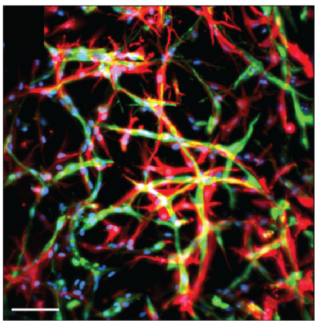
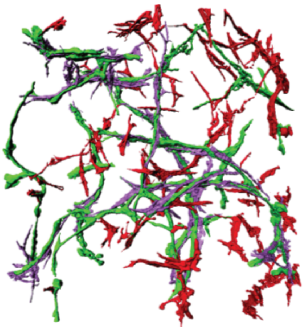
SPPIN's seminar winter-spring 2023

Tuesday, 31 January, 10h00, R229 (in presence and online)

SPPIN
SAINTS-PERES Paris Institute for the Neurosciences
SEMINARS







Philippe GIRARD, IJM, Université de Paris

Light-sheet fluorescence microscopy: Application to angiogenesis

Light-sheet fluorescence microscopy (LSFM) is an optical technique that becomes more and more popular for multi-view imaging of *in vivo* samples in its physiological environment. LSM combines the advantages of the direct optical sectioning to the ones of optical tomography by angular scanning. Such an approach provides several advantages in comparison to conventional 3-D microscopic techniques. It makes LSM an optical tool suited for imaging specimens with a sub-cellular resolution and with temporal resolution adapted for real-time monitoring of biological processes. In this context we have developed and built in-house a LSFM to visualise mature vascular networks in 3D vascularised microtumor model displaying perivascular recruitment and basement membrane. We characterized the generation of dense microvascular networks in collagen hydrogels and established parameters for the quantification of perivascular recruitment [1]. Our data demonstrate the strong potential of an *in vitro* production of mature microvasculature for improving cell-based therapies.

[1] Atlas Y et al. *Microvascular maturation by mesenchymal stem cells in vitro improves blood perfusion in implanted tissue constructs* Biomaterials, Volume 268, 2021,120594; doi: https://doi.org/10.1016/j.biomaterials.2020.120594

Host: Martin Oheim