**PROJECT PROPOSITION - Lab1** (M1, second semester)

Supervisor(s): jb FICHE

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Hosting lab: CBS 60 – Nöllmann’s group

Period of proposed project (put **x** instead of ロ) :

ロ Only 1st slot x Only 2nd slot

ロ One slot, but I have no preference on which ロ Both slots (with different groups)

1st slot: thursdays and fridays, from 3/2/2021 to 18/3/2021

2nd slot: thursdays and fridays (except for the last 2 weeks), from 31/3/2021 to 6/5/2021

Building an uniform illumination module for epifluorence microscopy

Subject (5 lines max for the description)

In fluorescence microscopy, lasers are a common source of excitation. They provide fluorophore excitation at precise wavelenghts and high power. However, illumination is often Gaussian-shaped and results in a highly inhomogeneous excitation over the sample.

Several solutions have been proposed to achieve homogeneous illumination. We would like to implement in our lab a method based on a multimode square-core fiber.

Technical tools to be used:

Knowledge in optics and laser alignment

Python programming

Objectives:

Build a proof-of-concept setup using a 150µm² square-core fiber. Compare illumination homogeneity with regular microscope.