

## 2027 Internship Offer

**Master 1:** YES – Duration: 4 months

**Master 2:** NO – Duration:

Team, Contact	Simonetta PIATTI, Simonetta.piatti@crbm.cnrs.fr
Title	Regulation of chromosome segregation by kinases and phosphatases
Research Themes and questions	The project deals on the mechanisms controlling the bipolar attachment of kinetochores to spindle microtubules and how errors in this process generate aneuploidies. We are particularly focusing on role of the conserved Mps1 kinase and its opposing PP1 phosphatase in this process.
Methods and experimental approaches	We use budding yeast as model system because of its fast division time, the possibility to carefully control the genetic background of cells, manipulate its genome with high precision and carry out rigorously controlled experiments. Most mechanisms underlying correct chromosome segregation are conserved between yeast and human. The project will involve genetic manipulations (genetic crosses, mutagenesis), live cell imaging, biochemistry (immunoprecipitations, western blot) and quantitative proteomics.
2-3 Publications	Ruggiero, A., Katou, Y., Shirahige, K., Sevéno, M. and Piatti, S. (2020). The phosphatase PP1 promotes mitotic slippage through Mad3 dephosphorylation. <i>Curr. Biol.</i> <b>30</b> : 335-343  Benzi, G., Camasses, A., Atsunori, Y., Katou, Y., Shirahige, K. and Piatti, S. (2020). A common molecular mechanism underlies the role of Mps1 in chromosome biorientation and the spindle assembly checkpoint. <i>EMBO Rep.</i> <b>21</b> : e50257  Benzi, G. and Piatti, S. (2020). Killing two birds with one stone: how budding yeast Mps1 controls chromosome segregation and spindle assembly checkpoint through phosphorylation of a single kinetochore protein (Review). <i>Curr. Genet.</i> <b>66</b> : 1037-1044