

2027 Internship Offer

Master 1: YES – Duration: 6 months

Master 2: YES – Duration: 6 months

Team, Contact	Etienne Schwob, nicolas.talarek@igmm.cnrs.fr
Title	Establishment of the DNA Replication Program in New Born Cells
Research Themes and questions	The DNA replication program defines how and when DNA is replicated, is cell-type specific but how and when it is established as remained elusive. As recently observed in early mouse embryos, our analyses have shown the replication program of budding yeast cells exiting quiescence is unexpectedly not defined. We will investigate the expression and the binding sites of DNA replication factors and the velocity of replication forks in germinating spores as well the specificities of the first cell cycle after spore germination (cell cycle phase duration, expression levels of cell cycle regulators, including cyclins).
Methods and experimental approaches	We will combine Nanopore sequencing, yeast genetics, cell biology and DNA combing to identify when the replication program is established and the mechanisms at play.
Illustration	
2-3 Publications	Barba Tena JD, Schwob E, Talarek N. Determination of S-Phase Duration Using 5-Ethynyl-2'-deoxyuridine Incorporation in <i>Saccharomyces cerevisiae</i> . <i>J Vis Exp</i> . 2022 Oct 21;(188). doi: 10.3791/64490. Montecchi R, Schwob E. Long-Term Imaging of DNA Damage and Cell Cycle Progression in Budding Yeast Using Spinning Disk Confocal Microscopy. <i>Methods Mol. Biol.</i> 1672, 527-536 (2018).