

Post-doctoral position in mechanobiology and host-pathogen interactions

The team Mechanobiology of Host-Microbe Interactions (MOHMI) is recruiting a young post-doctoral researcher to investigate the mechanobiology of *Shigella* infection.

Who we are

The lab investigates how microenvironment and physical forces control host-microbial interactions with a major focus on intestinal infections. Our research is highly interdisciplinary and combines microbiology, cell biology, bioengineering. We are also extensively using microfluidics and microfabrication approaches for developing new *ex vivo* technologies such as human organ on chip with the aim to better understand infections which are currently difficult to investigate using conventional *in vitro* systems or small animal models.

The team has been awarded by an ATIP-Avenir funding and is established within the Center of Infection and Immunity of Lille (CIIL) at the Institut Pasteur of Lille.

The project

Shigella is an enteroinvasive pathogen propagating from cell to cell within the intestinal epithelium. Using an organ on chip approach, our lab recently revealed that intestinal microarchitecture and physical forces are impacting *Shigella* infection by enhancing its spreading capacity (Grassart et al, Cell Host & microbes 2019). The lab now seek to identify the mechano-sensitive machinery controlling this critical step of infection.

The candidate will identify new molecular factors using a mechano-sensitive knock-out screening based on Crispr KO gene-editing and characterize how these host factors are implicated in the physical elongation of membrane protrusion facilitating *Shigella* spreading. The candidate will have the opportunity to design and produced new advanced *in vitro* assays and organ on chip technology. The project will include collaboration with several teams and platforms of CIIL and IEMN.

Candidate profile

We are seeking for a candidate with a background in the fields cell mechanobiology (preferentially) or host-pathogen interactions or microfabrication/microfluidics with a motivation for learning cellular microbiology. Due to the interdisciplinarity of the lab research, candidate need to be curious, creative and motivated to learn new approaches and fields.

The lab will support a full-time salary through for an initial period of 24 months. Salary and benefits will follow the official CNRS salary grid, commensurate with research experience.

It is expected that candidate start his employment from June 2022 but date of arrival is open to discussion.

If you are interested by this opportunity, please send your CV to agrasart@gmail.com

