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Marie Skłodowska-Curie Actions

*Developing talents,
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Postdoctoral Fellowships



CALL FOR APPLICATIONS 2025 – FELLOWS

Supervisor	Raphaël Candelier
Supervisor page	https://www.labojeanperrin.fr/?rcandelier&lang=en
Host Institution	Sorbonne Université https://www.sorbonne-universite.fr/en
Research Lab	Laboratoire Jean Perrin https://www.labojeanperrin.fr/?lang=en
Research Team	Stochastic dynamics of reactive and living systems http://www.labojeanperrin.fr/?article9

Project Title

Modelling complex collective dynamics in microorganisms

Project Description

The collective dynamics of microorganisms are extremely rich, echoing the great diversity of signals a single cell can sense, process and produce. Recent multi-agent simulations allows agents to be controlled by artificial neural networks, modeling the internal interaction network of cells. By bringing large sets of agents into interaction, these simulations reproduce the dynamics of real systems, and help identifying minimal sets of ingredients necessary for complex dynamical patterns.

Keywords

biophysics, agent-based simulations, dynamical patterns

Description of the Host Research Lab

LJP research activities consist in Physics at the interface of with Biology and Medicine. We develop new experimental approaches to probe complex biological systems at different scales, and we develop bio-inspired systems to develop new concepts or to improve our understanding of given biological mechanisms. A large part of our research aims at exploring the response of a biological system to external perturbations. Finally, the LJP includes a theoretical component closely interacting with experimenters.

To submit your application, please send an email with the required documents to
msca-pf@sorbonne-universite.fr