**Two PostDoc Positions: Distributed Algorithms for Microbiological Systems**

We are looking for two PostDocs at Université Paris-Saclay (in the labs LISN and LMF) to develop ***algorithms for consortia of bacterial cells in distributed biocomputing circuits***.

**Position.** We offer two PostDoc positions in a highly interdisciplinary project, working on the foundations of new robust distributed algorithms in microbiological systems. Both positions will initially be allocated for one year, with the possibility of extension. In exceptional cases, extension to up to three years is possible.

**Background.** Our objective is to use synthetic intercellular communication systems in bacterial systems to implement robust biological distributed algorithms. We will combine *methods from synthetic biology* with *theory from distributed computing* to build and test these synthetic bacterial systems. The hired PostDocs will contribute to the design and analysis of algorithms in distributed computing models, as well as to the refinement of the models themselves.

**Job profile.** The candidates should have experience in theoretical computer science or applied mathematics. They should have strong communication skills and the willingness to work collaboratively with other members of the team, including biologists, mathematicians, computer scientists, and control theorists. Background in distributed computing and/or chemical reaction networks is an advantage, but not essential.

**Project.** The PostDoc positions are a part of the DREAMY project (Distributed Algorithms for Microbiological Systems) funded by the French National Research Agency (ANR) and RFSI. The interdisciplinary project is a collaboration between partners from several leading French institutions: CNRS, INRAE, Inria, Université Paris-Saclay, and University of Bordeaux.

**Application.** For questions, please contact mfuegger@lsv.fr and thomas.nowak@lri.fr. To apply, please send a cover letter and a CV (with contact details of at least two referees).

***Selected References:***


1. Regot, S. *et al.* Distributed biological computation with multicellular engineered networks. *Nature* **469**, 207–211 (2011). https://doi.org/10.1038/nature09679
2. Tamsir, A., Tabor, J. J. & Voigt, C. A. Robust multicellular computing using genetically encoded NOR gates and chemical 'wires'. *Nature* **469**, 212–5 (2011). https://doi.org/10.1038/nature09565
3. Ortiz, M. E. & Endy, D. Engineered cell-cell communication via DNA messaging. *J. Biol. Eng.* **6**, (2012). https://doi.org/10.1186/1754-1611-6-16
4. Cho, D-J. *et al.* Distributed Computation with Continual Population Growth. *International Symposium on Distributed Computing (DISC 2020)*. https://drops.dagstuhl.de/opus/volltexte/2020/13085/
5. Andaur, V., *et al.* Reaching Agreement in Competitive Microbial Systems. *arXiv preprint* (2021) https://arxiv.org/abs/2103.07450