



Postdoctoral position (M/F) in Montpellier, France

Optimization of translation efficiency in *E. coli*

A 2-years post-doctoral position funded by the pre-industrial demonstrator Toulouse White Biotech (TWB) is available to work in the “*Synthetic, Functional and Evolutionary Genomics*” group led by Guillaume Cambray at the *Centre de Biochimie Structurale* (CBS) in Montpellier, France.

Project — Translation is one of the costliest cellular process. A better understanding of its efficiency determinants is required to improve gene expression control while minimizing cellular burdens. With this project, we will precisely program synthetic DNA to untangle the sequence determinant of translation elongation in a reporter system. We will characterize cellular fitness and production burden through quantification of mRNA stability, ribosome load, protein production and cell growth using deep-sequencing readouts. Results will be integrated to previously generated dataset on translation initiation to produce statistical and mechanistic models and create an accurate sequence optimization tool.

Candidate — The successful candidate should have a **PhD in biology, bioinformatics, biophysics** or related and a solid background in high-throughput **synthetic biology** and/or **microbiology**. Dual experience with **wet** (molecular, cell biology) and **dry** (computer programming, statistical modeling) lab work will be strongly favored. The candidate should feel comfortable working in an interdisciplinary and international environment, be highly **motivated** and **independent** to take a strong lead on the project. Clear communication of scientific results through written scientific reports, oral presentations and attendance to scientific meetings is expected.

Environment — The *Centre de Biochimie Structurale* (CBS) is an **international institute** offering a **dynamic and stimulating scientific environment** (13 teams, 140 persons, multiple nationalities; English is the working language). It provides state-of-the-art facilities, with a collaborative and lively atmosphere. Montpellier hosts a vibrant and diverse research community focusing on basic research, biomedicine, evolution and ecology. It is well connected to other major research areas. Montpellier is located a few kilometers from **sea and mountains in the sunny South**, offers a high quality of life and is one of the **most attractive cities in France**.

The project will be a tight collaboration with Luca Ciandrini (CBS), Sébastien Nouaille and Laurence Girbal (Toulouse Biotechnology Institute).

Application — Applications and informal queries about the project and the lab should be addressed to Guillaume Cambray (guillaume.cambray@cbs.cnrs.fr). Candidates should send a brief statement of their research interests, their CV and up to 3 recommendation contacts. The position is expected to begin in February 2020.

Related publications

Nguyen *et al.* 2019. *PLoS One*.
 Cambray *et al.* 2018. *Nature Biotechnology*, 54, 198.
 Szavits-Nossan *et al.* 2018. *Physical Review Letters* 120, 128101.
 Nouaille *et al.* 2017. *Nucleic Acids Research*, 45(20):1711-11724.
 Guimaraes *et al.* 2014. *Bioinformatics*, 30(8), 1087–1094.
 Ciandrini *et al.* 2013. *PLoS computational biology*, 9 (1), e1002866.

