Post-doctoral position for an 'Omic-oriented' parasitologist/biostatistician in Montpellier University, France

Our research

The goal of our research is to understand the genomic and transcriptomic mechanisms that enable the malaria parasite *Plasmodium falciparum* to establish a chronic, asymptomatic, infection. In regions such as The Gambia where malaria is highly seasonal, these infections constitute a reservoir during the dry season (with no or little transmission). From 2014 to 2017, we regularly collected blood samples from symptomatic and asymptomatic volunteers in a Gambian village, including a time series of monthly samples from the same volunteers over a 6-month period. **This dataset represents a unique opportunity to address novel questions about the parasite biology**. More details on our research can be found on OpenLabNotebooks.

Your projects

Project 1: Can *P. falciparum* sense its environment and adapt to it via transcriptional regulation?

With colleagues at LSHTM and at the Sanger Institute, we are sequencing parasite isolate transcriptomes using RNA-seq and single-cell RNA-seq technology. Your task is to identify genes differentially regulated in the dry vs wet season, in symptomatic vs asymptomatic infections, and identify putative candidates involved in cell growth. The transcriptome dataset, which will be linked with growth assay data, will be crucial in understanding how the parasite successfully establishes a chronic infection over the dry season, yet triggers a new epidemic over the following transmission season.

Project 2: *P. falciparum* population genetics and genomics.

In collaboration with MalariaGEN at the Sanger Institute, a dataset of parasite DNA barcodes and parasite genomes collected over 3 years in the same village is now available. You will describe the first parasite genomes sequenced from asymptomatic infections, and investigate the impact of the dry season selective pressure on the parasite population. Your task is to fully characterise the parasite population genetic diversity, using genotyping, genomic and epidemiologic data.

Your skills (essentials)

- PhD in biostatistics/bioinformatics, or in molecular biology with a strong background in biostatistics and programming
- Demonstrated experience in "Omics" data analysis
- Able to work independently
- Great communication skills in English
- Stay focused on answering a specific biological question, from the initial analysis to publication
- Passionate about scientific discoveries

Your skills (desirable)

- Knowledge about malaria biology and population genetics
- Wet-lab experience would be a plus, particularly FACS and cell-sorting
- Willing to supervise a Master student in bioinformatics / epidemiology
- Participate actively in the lab and institute life
- Appreciate XKCD humour

Who we are

Antoine Claessens (PI) is a malariologist who trained at Edinburgh University, the Sanger Institute, LSHTM and the MRC-Gambia. He recently joined Montpellier University as a "Chargé de Recherche INSERM". He was awarded an ATIP and an ANR-JC, with which this position will be funded.

A permanent Research Assistant will join the team full-time from October 2018. Each year, 2 or 3 Master students in bioinformatics / epidemiology will join the team for up to 6 months. We plan to recruit a PhD student in molecular biology in mid-2019.

What you can expect / what we can offer

The initial contract will be for two years, renewable for at least one year. You will be part of DIMNP and you will closely interact with modellists, with experienced bioinformaticians from the bioinformatics platform and with population geneticists from MIVEGEC. Both 'UMR' are very international, with highly competent and friendly scientists. More generally, Montpellier is a large hub for research in Life Sciences, particularly in the field of evolutionary biology. If you are from abroad, being able to speak French is not a requirement. We will help you with the administrative task of moving to France.

A more detailed description of this job application can be found here.

Interested in applying? Then please send an email to antoineclaessens@gmail.com with subject "post-doc #0001 - keep me updated". I will send you a link for a formal application in late September. Starting date: November 2018 (to be discussed).