**Postdoctoral Position:** "Dissecting the genetic architecture of immune reconstitution inflammatory syndrome in mycobacterial diseases by means of Next Generation sequencing with a special emphasis on RNAseq."

A postdoctoral position, funded by the Laboratory of Excellence Integrative Biology of Emerging Infectious Diseases (LabEx IBEID: http://www.pasteur.fr/labex/ibeid), is available in the Laboratory of Human Genetics of Infectious Diseases; ([https://www.hgid.org/index.php?lang=uk&menu=home](https://www.hgid.org/index.php?lang=uk&menu=home)) directed by Dr. Laurent Abel at the Imagine Institute in Paris.

Imagine is an interdisciplinary research center focused on human genetics located at the Necker Hospital campus in the heart of Paris. Imagine is affiliated with the Université Paris Descartes (Sorbonne Paris Cité), the INSERM French National Institute for Medical Research and the Paris Public Hospitals Group (Assistance Publique-Hôpitaux de Paris). Note that a new bioinformatics laboratory has recently joined the institute highlighting the growing interest of the institute for this discipline. See imagineinstitute.org for more information on the Institute.

**Description of the proposed project:**
The Laboratory of Human of Infectious Diseases is working on the genetic dissection of predisposition to infectious diseases both from a Mendelian and a Complex perspective. **Buruli ulcer (BU) is the third most common mycobacterial disease worldwide**, after tuberculosis and leprosy and has been identified as an emerging infectious disease.

A remarkable observation is that in ~20% of the patients who received antibiotic-based treatment, antimicrobial killing is accompanied by a **transient clinical deterioration, known as paradoxical reaction (PR)**. The similarity of PR with reversal reactions (RR) observed in leprosy patients is puzzling as they are both intense pro-inflammatory reactions following the start of antimicrobial treatment.

Recently, we have conducted a chip-based transcriptomics study of RRs that provided a stunning validation for the critical role of genetic factors in RR. In the present work we intend to **test the bold hypothesis that PR observed in BU share etiological mechanisms with RR observed in leprosy**, specifically regarding the critical role of related host genetic factors.

To test these hypotheses, we will take advantage of two unique samples of BU and leprosy patients we have enrolled over the last 15 years in Benin and Vietnam, respectively. We will first conduct **RNAseq profiling of PR patients**, and second perform **large-scale association testing of PR and RR with NGS-derived variants** within genes belonging to the most discriminating pathways observed in the transcriptomics studies (i.e. PR vs. non PR BU patients and RR vs. non RR leprosy patients). Taking advantage of our long-lasting collaboration with Pr. Olivier Lortholary, the most interesting variants will be tested in a cohort of patients presenting with an **IRIS-related invasive fungal disease**.

**Nb of positions available:** 1 (offered for two or three years)

**Research Fields:**
Biological sciences, Computational sciences, Biostatistics, Genetic epidemiology

**Career Stage:**
Experienced researcher
**Candidate requirements:**

Applicants should have a PhD in Bioinformatics, statistical genetics, Computational Biology, Biostatistics, or Statistical Genetics and at least one first author paper in a peer-reviewed journal. Analysis skills in NGS and large-scale ‘omics’ data analyses is required and in particular, experience in RNAseq data handling and analysis will be appreciated. Solid programming skills (Proficiency with R, Python (or Perl), and an ability to run software packages in C++) and familiarity with next-generation sequence data and biostatistical concepts required. Experience or proof-of-interest in the research topics described above (infectious diseases, immunology, medical science etc...) will be appreciated. Applicants must show high level of motivation, strong English communication skills, and strong initiative proposal. She/he will work both independently and collaboratively, and will need excellent organizational abilities and a real talent for interpersonal interactions.

The position is offered for two or three years
Salary will depend on previous experience.

**Interested candidates should submit a single pdf application file** to Alexandre Alcaïs (alexandre.alcais@inserm.fr) and Laurent Abel (laurent.abel@inserm.fr), Human Genetics of Infectious Diseases laboratory, Imagine Institute, 24 boulevard du Montparnasse, Paris, France with the following items:

- Motivation letter describing your research interests and how you could benefit the project
- Detailed CV (maximum 3 pages) with list of publications
- A short summary of past research, describing your specific contributions to your papers
- Contact information and letters of support of three references

Application deadline: November 30th, 2016