



Postdoctoral Fellow
in biomedical engineering applied to AMR
Laboratory for Optics and Biosciences (LOB)
Ecole Polytechnique, Palaiseau, France



The Mission:

The social and economic burden of the infectious disease Tuberculosis (TB) caused by the pathogen *Mycobacterium tuberculosis* (Mtb), is very high with the increasing impact of antimicrobial resistance (AMR). Superbugs like Mtb are already having a huge impact on healthcare systems around the world. The current knowledge of the mechanisms and biological triggers involved in the evolution of drug-resistant strains in Mtb is inadequate. This knowledge is crucial for developing new drug targets and improved diagnosis. Mutators (strains with increased mutation rates due to defects in DNA Repair systems) are a risk factor during the treatment of bacterial infections as they appear to enhance the selection of mutants expressing high and low levels of antibiotic resistance, posing serious risks in many clinical infections. Early detection of all forms of mutator strains is a key factor to reduce and contain the spread of these resistant strains. The overall aim of this project is to detect mutations in DNA repair systems that are associated with drug resistance in *Mycobacterium tuberculosis*. The results of your work are expected to greatly impact, in the long-term, the health sector and 'quality of life'/Lifelong Health worldwide, and yielding a potential for commercial exploitation.

This Postdoctoral Fellowship Program is funded by the ANR grant ExcellencES “Science and Technology at Polytechnique Paris (STeP2)” for two-year contract. The deadline of the application is on the 30th of May 2023 and final funding decisions will be made by scientific committee of the Engineering for Health interdisciplinary institute, IPP.

Activities:

The successful candidate will contribute to:

- Setting up a series of experiments in gene editing and biochemical characterization of proteins to address scientific questions.
- Performing the experiments.
- Statistical and Bioinformatic analysis.
- Writing scientific papers.
- Participating in the scientific life of research groups/institutes.

Your profile:

The successful applicant must have the following:

- Master's degree and Ph.D. in natural sciences, evolutionary biology, microbiology, infectious diseases, or related area.
- Wet lab experience in Microbiology/Molecular Biology and Biochemistry.
- Programming skills in R/Bash and Python.
- Experience with handling big data analysis and bioinformatics is a plus.
- Excellent track record of research achievements and publications in top-ranked journals.
- Experience in the coordination of research projects and scientific interaction.
- Strong motivation, scientific curiosity, and commitment to scientific excellence.
- Team player skills and enthusiasm to work in a multi-disciplinary, collaborative environment.
- Excellent command of the English language.

Contact:

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