PhD position: Interactions between Innate Immunity and Antibiotics

A fully funded four-year PhD position is available in the Bacteria-Host Interactions group, led by Dr. Elisabetta Cacace and hosted in the lab of Prof. Alexandre Persat at EPFL, Lausanne, Switzerland.

Project description

The rise of antibiotic resistance poses a global threat to healthcare. Antibiotics act together with the host immune system to clear bacterial infections, but a mechanistic understanding of these interactions is currently missing and could help refine our current antimicrobial treatments. This project aims to characterize the impact of innate immunity on antibiotic susceptibility and resistance evolution in clinically relevant bacterial pathogens. The project offers the opportunity to gain hands-on experience with automated platforms for high-throughput phenotypic screening, molecular microbiology methods and large-scale data analysis.

Requirements

We are seeking a highly motivated, curious and proactive PhD candidate, with strong problem-solving abilities and motivation to work in a collaborative and interactive research environment. Responsibilities of the successful candidate will include:

- Designing and conducting wet-lab experiments
- Analyzing data and effectively communicating results
- Participating in strategic planning, collaborations and writing scientific papers.

Essential requirements:

- Bachelors and Masters in biological sciences, biochemistry, engineering or a related subject;
- Aptitude to work in an open, dynamic and collaborative environment;
- Fluency in spoken and written English.

Preferred:

- Prior experience with microbiology and molecular biology experimental methods is appreciated.

What We Offer

- Mentorship within a young, dynamic research group hosted by the established Persat Lab;
- Exposure to a diverse and interdisciplinary environment at the interface between biology and medicine, including molecular microbiology, systems biology and bioengineering approaches;
- Access to state-of-the-art facilities and a vibrant scientific community at EPFL;
- Opportunities for scientific and professional development and international conference attendance.

Application information

Start date: 01.06.2026 or upon agreement before 01.09.2026.
Duration: 4 years, fully funded.
Note: part of the work in 2026 is expected to be carried out on a robotic platform located at ETH Zurich.