

PhD position: Co-evolution of Antimicrobial Resistance and Pathogenicity in Bacteria

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

In the context of the global antimicrobial resistance (AMR) crisis, the emergence of multidrug-resistant hypervirulent bacterial strains poses particular challenges. This project aims to systematically map the evolutionary trajectories and test the co-evolution of AMR and pathogenicity traits important for infection. The project offers the opportunity to explore unique collections of curated, globally distributed genomes and clinical data of prominent bacterial pathogens, using phylogenetic comparative methods to infer fitness tradeoffs and co-transmission patterns.

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 computational analyses
- Critically interpreting 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:

- A strong background in large-scale data analysis and computational genomics 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

Application deadline: 27.02.2026. Interviews are expected to take place via zoom in March 2026. The successful candidate must also fulfill the enrollment requirements of the [EPFL Doctoral School](#) (EDMS or EDBB), with deadline 15.04.2026.

Start date: 01.01.2027 (to be discussed with the successful candidate).

Duration: 4 years, fully funded.

Interested candidates should submit the following documents as a single PDF using this [form](#):

1. Motivation letter
2. Curriculum vitae
3. Academic transcripts
4. Two reference letters.