

# Master's student project: Understanding the genetic and phenotypic antimicrobial resistance in a rare zoonotic pathogen

## Where

Institute of Medical Microbiology  
University of Zurich

## Lab

[Applied Microbiology Research](#)

PI: Prof. Adrian Egli

## The project

We are seeking a Master's student to join the Global *Capnocytophaga* Consortium project. This collaborative project aims to collect and analyze *Capnocytophaga* strains from patients and pets worldwide, utilizing state-of-the-art genomics and multi-omics approaches to study pathogen evolution and virulence of this rare zoonotic pathogen (from dogs and cats).

## Research question

**What is the antibiotic susceptibility of *Capnocytophaga* to clinically relevant antibiotics and how does it correlate with the presence of antibiotic resistance genes? How are these genes expressed?**

In the master's project, you will learn how to manage a large biobank, culture microbes, analyze whole genome sequencing (WGS) data and perform antibiotic susceptibility testing according to international guidelines. Optionally, you will perform molecular experiments to confirm gene expression of the antimicrobial resistance (AMR) genes.

**Position:** Master's thesis student (unpaid)

**Duration:** 6-12 months

**Starting time:** flexible

**Supervisor:** Zoey Germuskova, PhD student

## Main tasks & responsibilities

- Cultivation of microbes, biobanking
- DNA extraction with a robot
- Phenotypic antibiotic susceptibility testing (AST) to determine minimal inhibitory concentrations (MICs) of different antibiotics and bacterial strain combinations
- Analysis of WGS data for presence of AMR genes
- Attending lab meetings & presentation of your results

## Your profile

- Master's student in the field of biology, microbiology, health sciences, or a related field.
- Basic laboratory skills
- Curiosity and ability to work systematically
- (optional) Basic knowledge of the command line or a programming language is an advantage

Please reach out to Prof. Adrian Egli ([aegli@imm.uzh.ch](mailto:aegli@imm.uzh.ch)) and Zoey Germuskova ([zgermuskova@imm.uzh.ch](mailto:zgermuskova@imm.uzh.ch)) with a short motivation, CV and your preferred starting date and thesis duration.



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