

## Postdoctoral

Ecole/Institution/Société:

**ETH Zurich, Switzerland / Zurich**

Discipline:

Type d'emploi::

**Full-time**

Date de publication:

**2022-04-18**

Personne à contacter:

**If you wish to apply for this position, please specify that you saw it on AKATECH.tech**

### **PhD in Modelling Evolutionary Dynamics of Antibiotic Resistance**

The Evolutionary Epidemiology group at ETH Zurich is recruiting a curious and enthusiastic PhD student to model the evolutionary dynamics of antibiotic resistance in *Escherichia coli*.

The position is supervised by Dr Sonja Lehtinen and funded by an SNF Prima grant. The Evolutionary Epidemiology group is part of the Theoretical Biology group, led by Prof. Sebastian Bonhoeffer. The group is friendly and collaborative, with people from diverse backgrounds working on a range of projects relating to microbial evolution and dynamics.

#### **Project background**

This project aims to improve our understanding of the ecological and evolutionary principles that govern the spread of antibiotic resistance. We are sampling and sequencing *E. coli* from a cohort of nursery children to generate a unique dataset on strain diversity and dynamics in the human gut.

#### **Job description**

Your role in the project will be to infer fundamental aspects of *E. coli* ecology from these data: how strains compete within the gut and how this competition affects transmission from person to person. You will use these insights to develop mathematical models of antibiotic resistance in *E. coli* to help explain puzzling trends in resistance dynamics.

#### **We offer**

- An exciting project working on a unique dataset in a friendly team and a great city.
- A supportive, stimulating and fun work environment with a strong culture of mentorship.
- Excellent resources for further learning and development at one of the world's leading research universities.
- Plenty of opportunities for collaboration, attending scientific conferences and building your scientific network.

#### **Your profile**

The position is ideal for someone combining an interest in theory, real-world data and public health. Curiosity and an aptitude for learning are more important than specific background. Essential requirements are:

- Strong analytical and quantitative skills (MSc in a quantitative subject).
- Fluency in at least one programming language ([e.g.](#) R, Python, C++, Matlab).
- Excellent written and oral communication skills in English.

## **About ETH Zürich**

ETH Zurich is one of the world's leading universities specialising in science and technology. We are renowned for our excellent education, cutting-edge fundamental research and direct transfer of new knowledge into society. Over 30,000 people from more than 120 countries find our university to be a place that promotes independent thinking and an environment that inspires excellence. Located in the heart of Europe, yet forging connections all over the world, we work together to develop solutions for the global challenges of today and tomorrow.

- A cover letter (1-2 pages) outlining your education, skills and experience, research interests and motivation for applying for the position.
- A CV.
- Names and contact details of two referees.

Please note that we exclusively accept applications submitted through our online application portal. Applications via email or postal services will not be considered. We welcome informal enquiries at: [sonja.lehtinen@env.ethz.ch](mailto:sonja.lehtinen@env.ethz.ch).

## **Job details**

**Title:** PhD in Modelling Evolutionary Dynamics of Antibiotic Resistance

**Employer:** ETH Zurich

**Location:** Rämistrasse 101 Zurich, Switzerland

**Job type:** PhD

**Field:** Programming Languages

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