Swiss TPH

Swiss Tropical and Public Health Institute
Schweizerisches Tropen- und Public Health-Institut
Institut Tropical et de Santé Publique Suisse

Associated Institute of the University of Basel

The Swiss Tropical and Public Health Institute (Swiss TPH) is a world-leading institute in global health with a particular focus on low- and middle-income countries. Associated with the University of Basel, Swiss TPH combines research, services, and education and training at the local, national, and international level. About 850 people from more than 80 nations work at Swiss TPH focusing on infectious and non-communicable diseases, environment, society, and health as well as health systems and interventions.

The Department of Epidemiology and Public Health (EPH), within the Swiss Tropical and Public Health Institute, develops and applies epidemiological, statistical and mathematical methods to advance innovation, validation, and application in the field of public health. Within the Disease Modelling Unit of the EPH we are looking for:

Postdoctoral Scientists in

Mathematical modelling of within host dynamics and evolution of resistant pathogens (80-100%)

We are seeking two postdoctoral scientists for several exciting opportunities to develop models of within-host and population dynamics of pathogens and resistance (parasite or viral dynamics). The successful candidates will join a globally leading team of scientists with established expertise notably in malaria and COVID-19 modeling.

There are many issues concerning the assessment of new interventions, control and elimination of parasites or viral disease that can only be answered through quantitative analysis, disease modelling and simulation.

The successful candidates will join a multidisciplinary team, providing evidence to decision-makers.

The positions are linked to the Swiss National Science Foundation Professorship of Melissa Penny on multi-scale mathematical modelling of pathogen, drug and vaccine interactions.

Your responsibilities would include:

The positions will involve developing and using mathematical and statistical models of pathogen dynamics such as within-host dynamics and intervention resistance evolution, in order to assess or optimize intervention strategies for control of malaria or viral pathogens.

Specifically, the candidates will be using and developing disease models, integrating new clinical data as known, as well as applying machine learning algorithms within Bayesian optimization framework to calibrate models and run simulations. The results of post-doctoral projects will provide essential evidence for understanding evolution of drug and vaccine resistant malaria and other pathogens and strategies to reduce the impact of resistance.

You should have the following experiences and skills in:

- Strong mathematical and statistical modeling skills, with a preference for demonstrated use of applied machine learning algorithms;
- Essential: PhD awarded no longer than 4-5 years ago in mathematics, statistics or a related discipline, e.g., quantitative epidemiology, ecology modelling, computational biology;
- Strong programming skills (in at least one of R, C++, Matlab, or Python), preferably with experience working with a version control system (preferably Git) and in using HPC clusters;
- Expertise/background in areas of infectious disease modelling, epidemiology, public health analysis;

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- Understanding of the epidemiology and the biology of parasitic diseases (especially malaria) or viral diseases (SARS-CoV-2/Influenza/respiratory viruses)
- Experience working with clinical and/or epidemiology data is a plus;
- Ability to deliver high-quality research and to publish in peer-reviewed journals;
- Ability to communicate effectively in spoken and written English, with good presentation skills;
- Ability to work independently and as part of an interdisciplinary team on large research projects in a culturally diverse environment; and
- Ability to initiate, plan, implement and deliver programs of work to tight deadlines.

Applicants with previous expertise in infectious disease modelling are especially encouraged to apply. Swiss TPH is an equal-opportunity employer. Applicants from backgrounds that are traditionally underrepresented in academia are encouraged to apply.

We offer:

The positions will be based at the Swiss TPH in Basel and the successful applicants will receive a **two year contract with possibility of extension**. Salary will be commensurate with experience (based on the Swiss National Science Foundation Postdoc salary scale). All positions are intended to be full-time (100%), but candidates hoping to work part-time (80%) will be considered.

The position is **available immediately** or preferably starting before 1 November 2021. There is no closing date for application, but we encourage applicants to submit their application as soon as possible. Applications will be considered as soon as submitted. Interviews will begin immediately. As long as the positions are published on the website of the Swiss TPH, they are still open.

Please submit your application online via the link provided below:

If you are interested, please submit your application with:

- Motivation letter
- CV
- Publication list
- Reference letters and diploma
- Names and contact information (email or phone) of 2-3 referees

Please note that we can only accept applications via our online recruiting tool: https://recruitingapp-2698.umantis.com/Jobs/All Applications via e-mail or external recruiter will not be considered.

Contact:

For further information about the position please visit our website https://www.swisstph.ch/en/about/eph/disease-modelling/ or contact Professor Melissa Penny melissa.penny@unibas.ch

Job Profile:

Start Date: Start immediately
Location: Basel, Switzerland
Duration: Two year post-doctoral contract with possibility of extension
Percentage: 100% (80% can be discussed)
Travel Required? No