



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 a:

Postdoctoral Scientists in

Mathematical modelling of COVID-19 (80-100%)

We are seeking two postdoctoral scientists for several exciting opportunities to develop disease models and to apply them to support decision making in health. 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 and control of COVID-19 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, clinicians, and product developers, to support optimizing and predicting the likely impact of new interventions. Projects are funded either by the Botnar Research Centre for Child Health or the Swiss National Science Foundation (SNF). Candidates will be supervised by Professor Melissa Penny and will collaborate within a dynamic team of experts.

Your responsibilities would include:

The candidates will undertake mathematical modelling and simulation to predict the impact of novel medical interventions (vaccines and treatment) on transmission and disease burden for COVID-19. For this purpose, the candidates will be using and developing disease models, integrating new clinical data as known, as well as applying machine learning algorithms in new approaches to aggregate analyses over a large number of simulations. The results of this comprehensive analysis will provide essential evidence for product development decisions along the clinical development pathway through to implementation of new drugs, immune therapies and vaccines. As well as to critically assess and use models to evaluate the evolution of virus dynamics and vaccine effects.

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 in 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;

- Understanding of the epidemiology and the biology of 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 **12-18 month contract with possibility of extension**. Salary will be commensurate with experience (as a minimum 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 October 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: 12-18 month post-doctoral scientist contract with possibility of extension

Percentage: 100% (80% can be discussed)

Travel Required? No