

ECVPH RESIDENTS' WORKSHOP

(MATH.) INFECTIOUS DISEASE MODELS

13.-15. November 2023, Bern, Switzerland

We will hold a workshop on **mathematical infectious disease modelling** directed to European College of Veterinary Public Health (ECVPH) residents, in Bern, Switzerland, from **Monday November 13 (9AM) to Wednesday November 15 (noon), 2023**.

Objectives

Transmission models are frequently used to investigate infectious disease spread and evaluate effectiveness of measures for its control. This leads to evidence that can be further used by policy makers for decision making on outbreaks control or control of endemic diseases. Several types of models are available, differing in respect to their basic concepts. The best choice depends, among others, on the research question, availability of data and complexity of the host-disease-environment system.

This workshop will address the following aspects of infectious disease modelling:

- Formulation of research question
- Concepts, structure and use of different transmission model types: mathematical models (differential equations), agent-based models, Monte Carlo simulation models, network-based models, models for vector borne diseases, epidemic vs. endemic models, deterministic vs. stochastic models, frequency vs. density dependent models
- Applications for selected model types (SIR models and integration of social network analysis with infectious disease models)
- Basic and effective reproductive ratio (R_0 , R_t), force of infection
- Sourcing of data (parameterization of the model)
- Sensitivity analysis
- Model validation

We will combine theory and exercises in the workshop.

Organization: Veterinary Public Health Institute (VPHI)

The workshop is **free of charge**. All course materials and coffee breaks will be covered. Lunch and dinner will be within the responsibility of the attendees and not compensated.

Accommodation and travel expenses can be at least partly supported under the condition that all expenses can be justified, and the receipts presented. The amount of the support will depend on the number of participants.

We are looking forward to a great time with interesting lectures and discussion. Please register online (<https://vphibern.ch/limesurvey/index.php/139859?lang=en>) if you would like to participate. For more information on the workshop or help to find an accommodation, please do not hesitate to contact us (filipe.maximiano@unibe.ch).