

# Swiss Epidemiology Winter School 2022



Eidgenössische Technische Hochschule Zürich  
Swiss Federal Institute of Technology Zurich



## Infectious disease models and their use in the SARS-CoV-2 pandemic

31 March – 2 April 2022

### Faculty

**PD Dr. Christian L. Althaus, PhD**

**Dr. Julien Riou, PhD**

**Dr. Emma Hodcroft, PhD**

Institute of Social and Preventive Medicine (ISPM), University of Bern, Switzerland

**Prof Dr. Roland Regoes, PhD, ETH Zurich**

### Venue

**CH – 3823 Wengen | SWITZERLAND**

Hotel Edelweiss (see map on <https://www.epi-winterschool.org/course-hotel-locations/>)

## Course preparation

Voluntary pre-course readings:

- Grassly & Fraser (2008, Nat Rev Microbiol)
- Heesterbeek et al. (2015, Science)

## Software installation

Students will bring their own laptops with installed versions of RStudio (<http://www.rstudio.com>) and RStan (<https://mc-stan.org/users/interfaces/rstan.html>). University of Bern IT staff will be on site and can provide help upon request per e-mail ([it@ispm.unibe.ch](mailto:it@ispm.unibe.ch)).

## Timetable

### Contact:

University of Bern | Institute of Social and Preventive Medicine  
Mittelstrasse 43  
3012 Bern | Switzerland  
[www.epi-winterschool.org](http://www.epi-winterschool.org) | [winterschool@ispm.unibe.ch](mailto:winterschool@ispm.unibe.ch)

## Timetable

Thursday, March 31		
08:30	Introduction	PD Dr. Christian Althaus, University of Bern
08:35	History of infectious disease modeling	Prof. Dr. Roland Regoes, ETH Zurich
09:30	Coffee break	
10:00	Compartmental models	PD Dr. Christian Althaus, University of Bern
12:00	Afternoon break	
17:00	Computer practical: Modeling an influenza epidemic	
19:00	End of day	

Friday, April 1		
08:30	Bayesian inference with Stan	Dr. Julien Riou, University of Bern
10:00	Coffee break	
10:30	Fitting and diagnosing an SIR model in Stan	Dr. Julien Riou, University of Bern
12:00	Afternoon break	
17:00	Computer practical: Modeling SARS-CoV-2 in Switzerland	
19:00	End of day	

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Saturday, April 2		
08:30	Real-time tracking for real-time pandemics	Dr. Emma Hodcroft, University of Bern
10:00	Coffee break	
10:30	Infectious disease modeling during the SARS-CoV-2 pandemic	PD Dr. Christian Althaus, University of Bern
12:00	Afternoon break	
16:00	Workshop: How to use infectious disease modeling for policy making	
18:00	End of day	

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