Swiss Epidemiology Winter School 2020

Digital Epidemiology and Participatory surveillance: Methods and Applications

23 – 25 January 2020

Faculty	**Dr. Daniela Paolotti** ISI Foundation, Turin, Italy **Dr. Ciro Cattuto** ISI Foundation, Turin, Italy
Venue	**CH – 3823 Wengen | SWITZERLAND** Hotel Sunstar (see map on http://www.epi-winterschool.org/hotels)
Description	The pervasiveness of the Web and mobile technologies as well as the growing adoption of smart wearable sensors have significantly changed the landscape of epidemic intelligence data gathering with an unprecedented impact on global public health. The digital traces generated by a large number of individuals interacting with Web and mobile technologies as well as wearable sensors contain epidemiological indicators that are not easily accessed with traditional approaches. Collectively, these digital sources largely enhance the capabilities of epidemiology and global public health. Indeed, since more than a decade, the growing field of digital epidemiology (https://www.ncbi.nlm.nih.gov/pubmed/?term=29302758) has been using digital data generated outside the public health system to carry out epidemiological studies on an unprecedented scale and with an unprecedented precision. The goal of this course is to provide an overview of the main success stories collected during the first ten years of this young and exciting field. Moreover, the students will be guided on a few case studies with a hands-on approach.
Objectives	By the end of this course participants will: - have a knowledge of the state-of-the-art research in the young and growing field of Digital Epidemiology. - be able to collect data from digital proxy sources such as Google Trends, Wikipedia, Twitter etc. - be able to design simple models for inferring and predicting epidemiological indicators from proxy data.

- receive an introduction to advanced topics such as data mining and machine learning methods to infer epidemiological indicators from proxy data.

Target audience	This course is aimed at epidemiologists, biostatistician and other health researchers with strong quantitative skills and experience in statistical analysis. Python notebooks will be used for the computer practical sessions. Familiarity with Python is desirable, although code and solutions will be provided.

Outline

The course will run over three days and consist of lectures, group work and computer practical sessions. We start early in the morning with a review of the previous day. During the extended break in the afternoon participants review course materials, catch up on emails or go skiing. We reconvene at 4:30 pm for the computer sessions.

Thursday, 23 January (8:00 – 12:00 | 16:30 – 18:30)

Friday, 24 January (8:00 – 12:00 | 16:30 – 18:30)

Saturday, 25 January (8:00 – 12:00 | 16:30 – 18:30)

Credits

1.0 ECTS

To bring along

Students should bring their own portable computers. They should install Python and Jupiter (http://jupyter.org/install) in order to work with Python notebooks.

University of Bern IT staff onsite can provide help upon request per e-mail (it@ispm.unibe.ch)

Course fee

SSPH+ students:	CHF 700
Academic:	CHF 900
Industry:	CHF 2000

Registration

You can register on the Winter School website www.epi-winterschool.org.

Accomodation

Participants must book their accommodations themselves. Please see our recommendations on www.epi-winterschool.org/hotels for special prices.