Big Data in Public Health

Facilitators

Oliver Gruebner **Eva Furrer** **Milo Puhan** **Viktor von Wyl**	University of Zurich (UZH)
John Naslund	Harvard Medical School, USA
Suzanne Elayan **Martin Sykora**	Loughborough University, UK
Marta Fadda	University of Lugano
Steve Mooney	University of Washington, USA
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Description

Big data approaches raise high hopes, promising that this new form of data mining and analysis will significantly improve public health research and action. **The proposed course will give a broad overview of potentials and limitations of big data from multiple public health disciplines.** Definitions and concepts particularly from epidemiology, geography, and psychology are introduced and discussed in key note lectures to evaluate the public health relevance of big data. We will also examine key legal and ethical challenges from a broader public health perspective. Subsequently, **we will explore emerging methods in big data analysis and their application for advancing public health research, with a particular focus on mental health** in mini projects working on perspective papers (i.e., group assignments extending on the key note lectures) during and in the aftermath of the course.

Objectives

By the end of the course, the participants are familiar with public health relevant definitions and challenges of big data approaches from major public health disciplines. They are able to address key issues in research and the broader public health discourse. **Specifically, participants will:**

1. Discuss the relevance and potential for big data to advance public health research
2. Review novel methods in big data analysis towards addressing important public health challenges

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3. **Write a position paper highlighting the impact for real-world public health challenges using big data approaches.**

Dates	**08 – 12 May 2023**
Eligibility	Priority is given to PhD students registered at Swiss School of Public Health + (SSPH+). Other students and external participants equipped with master degrees in the (various) fields of public health and related areas are welcome to apply for limited space.
Course Structure	The course is conducted **on site at the UZH** and consists of key note lectures that will introduce into the wider topic and that will provide ample room for questions and discussions. We will further discuss specific questions such as ethical and legal aspects in big data for public health. In break out groups, participants will work in teams to review specific questions around applying big data in public health as a mini project. The preliminary outcomes of the mini projects will be presented and discussed in the plenum at the end of the course.
Assignment	1) Read the papers received **before the course**. 2) Mini project group work (3-4 persons), **day 4**: Evaluate the discussed big data approaches in the light of a given real-world public health challenge and sketch a position paper in this context. 3) Mini project group work, **day 5**. Present the outline of this position paper in a (e.g., Power Point) presentation and discuss the presentations of the other groups. 4) Mini project group work <u>after</u> the course, **due 2 weeks after the course:** Write a position paper (minimum 2 pages) based on your outline presented in class that highlights the impact of big data methods for a given real-world public health challenge.
Assessment	Participants will be evaluated by their active participation during the course and by their presentation of group assignments (mini projects) at the end of the course. Furthermore, participants will write a position paper (minimum 2 pages) highlighting the outcomes of their mini projects due **2 weeks after the course** (26 May 2023).

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Credits

2 ECTS: Preparation work: 30 h; teaching : 30 h.

(1 ECTS corresponds to appr. 25-30 hours workload)

Location

University of Zurich,

Room: tba

Course Fees

	2 ECTS
SSPH+IGC Students	30 CHF
Postdocs from SSPH+ partner institutes	30 CHF
External PhD students and MD students	1'000 CHF
Others	2'000 CHF

Registration

www.conftool.com/ssph-phd-courses2023

Deadline for Registration

8 April 2023

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