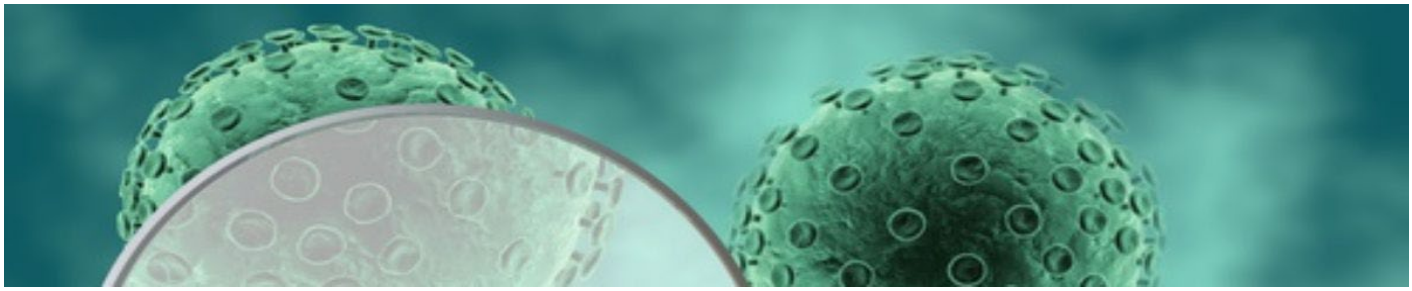
CAS in Clinical Research



Basic Biostatistics

Description

Statistics is the discipline that deals with randomness and probabilities and how to extract information from data in the face of randomness and uncertainty. Each scientific discipline attempting to learn about real world phenomena deals with statistical issues. Biostatistics is the sub-discipline of Statistics that focuses on applications in medicine, health care and public health.

In this module you learn how to transparently describe data that was collected for a given study. In addition, you learn how to make inferences and draw conclusions that go beyond the current data set and make statements about the underlying population of interest. Furthermore, the information in the data set has to be condensed and presented in an understandable fashion. For this

- you reduce data by calculating group level quantities (like means, risks etc)
- you quantify and interpret the amount of statistical uncertainty in your results, mostly by using 95% confidence intervals
- you make the first steps in using a statistical software (Stata) for data description, data transformation and simple statistical analyses (you will receive a Stata license for this)
- you learn how to communicate the results obtained
- you translate specific questions into relevant statistical quantities of interest

Objectives

Quantities of descriptive statistics and the fundamentals of statistical inference

- Uncertainty due to randomness
- 95% confidence intervals
- Calculating and transforming probability statements
- The interpretation of a p-value

Dates

17-18 August 2023 (Thursday – Friday) and

31 August- 1 September 2023 (Thursday – Friday)

Contact:

Course coordination: Teaching Office ISPM

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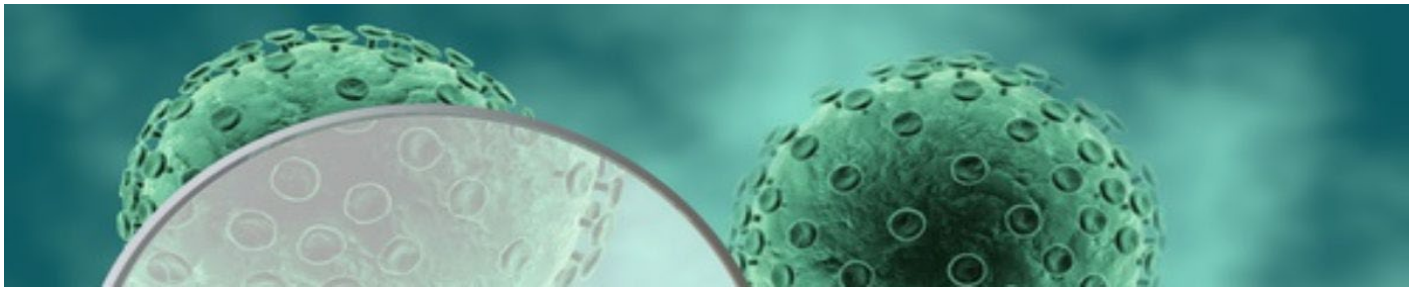

Equipment	Participants must bring their own laptops.
Course Structure	The course follows the concepts of the textbook «Essential medical statistics» (https://www.blackwellpublishing.com/essentialmedstats/) and is a mixture of lectures and working on practical problems, concrete examples and data sets (in-class and at home). With this, you will develop a solid understanding of the main concepts of statistical inference biomedical sciences. The course material will be made available on a password-protected course homepage (http://basic-biostats.ispmbern.ch/).
Assessment	Written exam during the course
Credits	**3 ECTS** 12 hours preparation, no postprocessing In total 24 hours of off-class work and course tasks between August 22 and August 29 (1 ECTS corresponds to appr. 30 hours' work)
Facilitator	Prof. Marcel Zwahlen, Institute of Social and Preventive Medicine (ISPM), University Bern
Location	University of Bern, tba

Contact:

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