

Biostatistics for non-statisticians: good practices, misuse and pitfalls.

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1 ECTS

Summary The course aims to explain the importance of biostatistics for science reproducibility/reliability and teach good practices. The lectures are tailored to biologists and concentrate on logic thinking: no heavy mathematics. Particular emphasis will be placed on caveats about misconceptions and misuses in experimental design, analysis and disclosure.

Schedule, location and registration

- **Session 1** – February 20, 2023: 9h30 – 13h (Auditoire Pierre Decker BU19)
- **Session 2** – February 21, 2023: 9h30 – 13h (Seminar room 7 : BU21/04/114)
- **Session 3** – February 27, 2023: 9h30 – 13h (Auditoire Pierre Decker BU19)

Please see the [access plan here](#) to find your way.

For registration to the course, please write to Ulrike.toepel@unil.ch. The course is limited to 16 participants; first come – first served ...

Content of course sessions

- **Session 1:**
 - General introduction, raw concepts
 - A short (and digestible) introduction to frequentist inference
 - Design beyond sample size
 - Misconceptions and misuse of p-values
 - Sample size: not too few and not too many
- **Session 2:**
 - Choosing a test
 - Caveats with multiple comparisons
 - Correlation and the (linear) regression multiverse
 - Stop the “bar graph and SEM” galore
- **Session 3:**
 - Bits of epidemiology
 - A concrete example: statistics in genomics
 - How not to sweep outliers and missing data under the rug

Evaluation Collective and group-organized problem-based learning (PBL) with made-up examples during the course. Collective PBL will be cases we will all discuss together. For group-based PBL, groups will have 10 min to prepare a case and 5 min to present it.