

Advanced Topics in Biostatistics 2020/2021

**Division of Biostatistics
DKFZ**

Knowledge in Basic Statistics required

- Descriptive statistics
- Confidence Intervals
- Hypothesis testing, p-value, power of a study
- t-tests for comparing means
- Chi-square-tests for comparing proportions

Date	Topic	Lecturer
7 Oct	Analysis of Variance	Dr. Silvia Calderazzo
14 Oct	Multiple linear regression	Dr. Diana Tichy
21 Oct	Logistic regression	PD Dr. Tim Holland-Letz
28 Oct	Dose-response modeling	Prof. Dr. Annette Kopp-Schneider
4 Nov	Non-parametric methods	Prof. Dr. Annette Kopp-Schneider
11 Nov	Diagnostic tests	Dr. Diana Tichy
18 Nov	Measuring agreement	Prof. Dr. Annette Kopp-Schneider
25 Nov	Survival analysis: Kaplan-Meier, logrank	Thomas Hielscher
2 Dec	Survival analysis: Cox PH regression	Thomas Hielscher
9 Dec	Design of clinical trials	PD Dr. Tim Holland-Letz
16 Dec	Multiple testing	PD Dr. Tim Holland-Letz
13 Jan	Linear mixed models	Dr. Nicholas Schreck
20 Jan	Introduction to Bayesian thinking	Dr. Silvia Calderazzo
27 Jan	Issues in Statistical Practice: Errors, missing data, and reproducible research	Dr. Manuel Wiesenfarth
3 Feb	Statistical issues in bioinformatics: Screening different types of omics data	Dr. Dominic Edelmann
10 Feb	Statistical issues in bioinformatics: Gene set tests	Dr. Dominic Edelmann
17 Feb	Statistical issues in bioinformatics: Unsupervised learning and visualisation	Thomas Hielscher
24 Feb	Statistical issues in bioinformatics: Supervised learning	Dr. Manuel Wiesenfarth
3 Mar	Validation of statistical models: Cross-validation, bootstrapping & Co	Dr. Manuel Wiesenfarth

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General interest and basis, attend!

Diverse topics

Of special interest when dealing with omics data

Organization

- Online lecture via zoom:
<https://us02web.zoom.us/j/85086921541?pwd=YkxTeTdmTTZjRFRGQWF4QnByU1h6QT09>
- Participants enter muted and with video off: please don't change this!
- Use the chat function for questions: your questions will be read out loud.
- Lectures will be recorded.
- After the lecture, recording is stopped and the lecturer will stay online for a while to answer questions. Again, pose your questions in the chat!
- Recordings will be available in the DKFZ mediathek (hidden, cannot be downloaded).
- Lecture handouts + link to the recording will be sent out via email.

Credit points for DKFZ PhD program

- 1 credit point awarded for attendance of 14 lectures.
- Attendance is recorded in zoom.
- If you wish to obtain a credit point use your full name.

Biostatistical advice needed?

The Division of Biostatistics provides biostatistical consulting to all DKFZ scientists.

Contact us whenever you need statistical advice on

- experimental design
- which methods to use
- how to get correct results from statistical software
- how to properly interpret results.

We normally expect PhD candidates to perform their own analyses for their thesis.

In case of a more complex analysis requiring advanced statistical knowledge and/or software expertise we will provide the necessary support and perform the analyses.

Visit our homepage for details: <http://www.dkfz.de/en/biostatistics>

For support please contact: biostatistics-consulting@dkfz.de and briefly describe your experiment/question and your aim.