

Applied Statistics for Molecular Biologists

This course is directed toward those molecular biology researchers that are interested in getting an introduction in statistical handling of quantitative data. Focus will be both the creation as well as the interpretation of statistical data. Various interactive showcase exercises will be provided to cover e.g. qPCR, quantitative imaging, and treatment-response cases.

Mathematical knowledge is *not* required; the course will be formula-free.

Types of Quantitative Data in Molecular Biology
Descriptive Statistics, Reporting and Visualizing Quantitative Data
Population Space, Statistical Inference, Induction
Error Bars

Statistical Tests
Test Theory
P-Values, Generation and Interpretation
Common Statistical Tests
Multiple Testing
Reporting Statistical Tests

Statistics Software
ANOVA
Time series
Correlation Analyses
High-level Analyses Overview

Experimental Design, How to improve experimental layout to get 'better'
Statistics
Random/Systematic Errors, Noise
Power Estimation