FONDAZIONE GUIDO BERNARDINI
BETTER EDUCATION FOR BETTER SCIENCE

Online Course

Intensive course on experimental design and biostatistics

4,11 and 25 October 2024
from 09.00 to 12.15

Currently, the scientific literature is critical of the translatability of *in vivo* research results and of the reproducibility of research conducted with animals. There are certainly solutions on what should be done to improve the translatability and reproducibility of animal experiments.
Among the solutions, statistics and experimental design play a central role to reach better translatability and reproducibility, in addition to contribute to the Reduction arm of the ThreeRs.

This course addresses the central question of how to design your experiments and which test to perform given your specific research questions.

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Dates	4 October, 11 October, and 25 October 2024, from 09.00 to 12.15
Language	English
Teaching method	Online on Zoom platform
Target audience	The course is aimed at PhD students, postdocs, researchers, lab animal scientists and technicians, and members of Animal Welfare Bodies
Contents of the course	**STATISTICS FOR ANIMAL EXPERIMENTS** Reserch design: • Confouding factors • Randomization • Blinding • Defining outcomes and endpoints Hypothesis tests: • How to select your statistical test ? • One and two-sided tests • Pitfalls and caveats in hypothesis testing • Multiple testing and p-hacking • Student t-test • ANOVA **THE EXPERIMENTAL DESIGN: HOW TO GENERALIZE THE RESULTS** • How to calculate the «right» sample size: • Power calculation • Calculating power using simulations • Post-hoc power calculation Experimental design illustrated by practical examples: • Randomized, blinded, controlled experiments • Formal experimental design: Completely randomized, Randomized complete block, Factorial design, Examples, advantages and limitations
Number of participants	Maximum 30
Registration fee	200 Euro + 22% VAT RATE when applicable Early bird registration within 20 July 2023, 2023: 180 Euro + 22% VAT RATE when applicable
Contacts	For more info please contact: secretary@fondazioneguidobernardini.org