ADVANCED STATISTICAL MODELS WITH *R* FOR BIOLOGICAL SCIENCES

COURSE PROGRAM

CIIMAR – 20 HOURS; 16-20 December 2024

Session 1. 10:00 – 14:00 h (break from 11:45 to 12:15h)
    1.1 Reminder of linear regression
    1.2 Exercise
    1.3 Reminder of ANOVA
    1.4 Exercise

Session 2. 10:00 – 14:00 h (break from 11:45 to 12:15h)
    2.1 General linear model (GLM). Introduction and example 1
    2.2 GLM, Example 2
    2.3 Exercise
    2.4 GLM with random factors (mixed effects models). Example

Session 3. 10:00 – 14:00 h (break from 11:45 to 12:15h)
    3.1 GLM with random factors. Hierarchical (nested) designs
    3.2 GLM with random factors. Random slope designs
    3.3 Exercise
    3.4 Exercise

Session 4. 10:00 – 14:00 h (break from 11:45 to 12:15h)
    4.1 Generalized linear models (GLZ). Introduction and example binomial distribution
    4.2 GLZ, example Poisson distribution
    4.3 GLZ, example with over-dispersion (negative binomial distribution)
    4.4 GLZ with random factors. Example

Session 5. 10:00 – 14:00 h (break from 11:45 to 12:15h)
    5.1 Exercise
    5.2 Generalized additive models (GAM). Introduction and example
    5.3 GAM models with random factors. Example
    5.4 Exercise