

# Applied Genetic Evaluation - Exercise 1

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## Problem 1: Model Selection

We assume that we have a dataset for the response variable `carcass weight` (CW) and for some predictor variables

- sex (`sex`)
- slaughterhouse (`slh`)
- herd (`hrd`)
- age at slaughter (`age`)
- day of month when animal was slaughtered (`day`) and
- humidity (`hum`)

Use a fixed linear effects model and determine which of the predictor variables are important for the response.

The data is available from [https://charlotte-ngs.github.io/GELASMSS2020/ex/w09/data\\_bp\\_w09.csv](https://charlotte-ngs.github.io/GELASMSS2020/ex/w09/data_bp_w09.csv).

### Hint

- Use the function `lm` in R to fit the fixed linear effects model
- Use Mallows  $C_p$  statistic and the adjusted coefficient of determination  $R_{adj}^2$  as model selection criteria
- Use the backward model selection approach