

# Pig Science - Breeding - Exercise 2

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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/pigsciencess2022/data/psb\\_model\\_sel\\_ex02.csv](https://charlotte-ngs.github.io/pigsciencess2022/data/psb_model_sel_ex02.csv).

## Hint

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