

## Graduate School Workshop on Statistical Analysis using R

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### **Aims**

On completion, students should know how to:

- a) install R from scratch
- b) identify and install additional packages in R
- c) import data to R in different formats
- d) manipulate data in R for use in different ways including transformations
- e) apply core statistical techniques in R to real datasets
- f) use diagnostic checks in R to identify inappropriate assumptions

### **Organization**

Students must have their own laptop (Windows, Mac or Linux are all fine), but do not need to pre-install any software as installation will be part of the workshop.

The workshop will be run using Zoom, so participants need to be able to run Zoom on that day in order to connect remotely, in order to benefit from the interactive teaching. The session will be recorded to benefit those unable to join us live.

Our focus will be on the dataset below, but we will spend some time dividing up the work and then discussing the different answers we get from different approaches.

### **Assumed knowledge**

Students will be assumed to already understand basic estimation and hypothesis testing for linear models. I will provide a downloadable textbook in advance for those who need revision.

### **Reference**

An Introduction to R - please download this in advance to your laptop:

<https://cran.r-project.org/doc/manuals/r-release/R-intro.pdf>