Introduction to statistical analyses with R and RStudio

R is rapidly becoming the standard platform for data manipulation, visualization and analysis and has a number of advantages over other statistical software packages. A wide community of users contribute to R, resulting in an enormous coverage of statistical procedures, including many that are not available in any other statistical program. Furthermore, it is highly flexible for programming and scripting purposes, for example when manipulating data or creating professional plots. However, R lacks standard GUI menus, as in SPSS for example, from which to choose what statistical test to perform or which graph to create. As a consequence, R is more challenging to master. Therefore, this course offers an elaborate introduction into data analysis in R. Participants will learn to operate R, make plots, fit, assess and interpret a variety of basic statistical models. The statistical knowledge required for this short course is limited to regression models for linear, dichotomous and multivariate data.

This course is designed for faculty who want to start using R in their analytical workflow. The course is aimed at mastering skills and does not primarily focus on theory; although some theory cannot be escaped when interpreting output. You will not be bothered with mathematical notation beyond the simple $\hat{y} = \alpha X + b$.

We will learn to

- use R and the RStudio environment
- manipulate and edit data
- create graphs
- run linear models

Participants should bring a laptop computer with R and RStudio installed.

This short course will be offered twice:
- April: Tuesday and Wednesday 9-10 April 2019 from 9:00 – 13:00.
- May: Tuesday and Wednesday 7-8 May 2019 from 9:00 – 13:00.

How to prepare
Participants **have to bring a laptop** with R and RStudio installed. If you use an Utrecht University HP laptop, please apply for administrator rights (ask your department manager).

All course materials and instructions can in due time be found at
https://www.gerkovink.com/RforFSS/