



## **CICASP workshop 2018 - Data analysis with R**

Please send an email to [julie.a.m.duboscq@gmail.com](mailto:julie.a.m.duboscq@gmail.com) or [andrew.j.j.macintosh@gmail.com](mailto:andrew.j.j.macintosh@gmail.com) to confirm attendance **BEFORE FEB 16**, and to [christofneumann1@gmail.com](mailto:christofneumann1@gmail.com) if you have questions or queries about content.

### **DATE: Feb 19 TIME: 13:00 – 16:00 LOCATION: Library 3F intro to R**

In this session we will get to know R and cover some essential concepts related to working with R.  
[R, functions, objects, packages, scripts]

### **DATE: Feb 20 TIME: 13:00 – 16:00 LOCATION: Library 3F workflow 1**

This session is dealing with the fundamentals of handling and formatting data so that we can use them with R. We will also read and write data from and to external sources like Excel and plain text files. Finally, we will get to know RStudio and how it helps working with R and organizing our analyses.  
[data hygiene, importing/exporting data, RStudio, Rstudio projects]

### **DATE: Feb 22 TIME: 08:30 – 11:30 LOCATION: Large Conference Room 1F graphics 1**

This session introduces the graphical capabilities of R. We will start from simple figures to more complex ones. We will also discuss different file formats for saving figures and in which context which format is most appropriate.  
[plot, high-level, low-level, file formats]

### **DATE: Feb 23 TIME: 08:30 – 11:30 LOCATION: Large Conference Room 1F statistics**

In this session I will introduce some general concepts when doing statistics with R.  
[non-parametric methods, parametric models, assumptions, diagnostics]

### **DATE: Feb 27 TIME: 08:30 – 11:30 LOCATION: Large Conference Room 1F workflow 2**

This session is centered around reproducibility and how R helps us to write interactive and beautiful documents, which combine the analysis with the actual text of a chapter or manuscript, including reference management. We will also briefly touch upon version control, which allows us to keep track of changes in our data and script files without creating multiple copies of these files.  
[Rmarkdown, version control, git, Latex]

### **DATE: Mar 01 TIME: 08:30 – 11:30 LOCATION: Large Conference Room 1F programming**

In this session we will move on to some programming, which gives us a glimpse at the power R has as a programming language. We will write our own functions. We will also write loops, which allow for example doing permutation and randomization tests.  
[loops, custom functions, randomization, permutation]

### **DATE: Mar 01 TIME: 13:00 – 16:00 LOCATION: Large Conference Room 1F graphics 2**

In this session we will create some more complex figures, for example arranging figures into multi-figure layouts. We will also take a first glance at shiny R, which allows creating interactive (web) apps, for example illustrating data and/or results during presentations or as supplements in journal articles.  
[layouts, shiny R]

### **DATE: Mar 02 TIME: 08:30 – 11:30 LOCATION: Library 3F an applied analysis from scratch**

In this session we will go through a real-world example of a data analysis. We will calculate several behavioural indices (dominance, social bonds, network measures) and use them to answer questions regarding for example hormone levels and parasite load.  
[example, dominance, social bonds, networks]

**Sessions may be repeated and/or moved around depending on interest and attendance, e.g. if several of you cannot attend on the scheduled day but are really interested in this session.**