

# Introduction to R

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# Chapter 1

## Before we start

Dates, time & location

Dates:

- Module 1: Monday 18th & Tuesday 19th February, 2019
- Module 2: Monday 25th & Tuesday 26th February, 2019
- Module 3: Monday 4th & Tuesday 5th March, 2019
- Module 4: Monday 11th & Tuesday 12th March, 2019

Time:

- 10:00-13:30

Location:

- CRG Training center

Instructors

Julia Ponomarenko (Module 4) Sarah Bonnin (Module 1, 2, 3) from the CRG  
Bioinformatics core facility (office 460, 4th floor hotel side)

Learning objectives



## Chapter 2

# What is R ?

- Programming language and environment for **data manipulation**, **statistical computing**, and **graphical display**.
- Implementation of the S programming language
- Created at the University of Auckland, New Zealand:
  - Initial version released in 1995
  - Stable version released in 2000
- **Free and open source !**
  - <https://www.r-project.org/>
- Interactive, flexible
- Very active community of developers and users!
  - Many resources and forums available
- Access through a command-line interpreter:





## Chapter 3

# R Studio

- Free and open source IDE (Integrated Development Environment) for R
- Available for Windows, Mac OS and LINUX

### RStudio access

- RStudio Desktop installation
- RStudio access from the CRG server
  - Access with CRG credentials
  - For those who don't have access to the CRG server, use the guest accounts.

### RStudio interface

- 4 panels:
  - top-left: scripts and files
  - bottom-left: R terminal
  - top-right: objects, history and environment
  - bottom-right: tree of folders, graph window, packages, help window, viewer

Setting up the folder structure for the course

Rcourse |-Module1 |-Module2 |-Module3 |-Module4



## Chapter 4

# Paths and directories



## Chapter 5

### R basics



## Chapter 6

# Functions basics





## Chapter 7

## R scripts



## Chapter 8

### Exercise 1



## Chapter 9

# Data types