Some notes about the Robinson module operates

Notes

- Focus: “data analysis” / “data science” aspects via hands-on time for assigned tasks, i.e., emphasis on “practical”
- We will give basic demonstrations containing most of what you need to know to get started, but we follow the motto of “change stuff and see what happens”
- we: i) do live-coding (as much as possible); ii) will share the code for the demos **after** the demo (somewhat unpopular)
- Bit of self-directed learning (group exercise)
- R packages: most should be installed, if you need one installed, ask Mark to install (permissions)

How to actually learn any new programming concept

Changing stuff and seeing what happens

O RLY?

@ThePracticalDev

We will operate Data Carpentry style

- Etherpad:
  - https://etherpad.net/p/Bio334_2019
  - http://bit.ly/2VHmxCz
- Sticky notes: at end of each (half-)day, give some feedback ..
  - **red**: *negative, something we can improve*
  - **green**: *positive, something you liked or that worked well*

Exercises

- Each module:
  - Demo and/or lecture (~30-45 minutes)
  - Work time (~2 hours)
  - Discuss solutions (~10-20 minutes)
  - (add breaks to your work time!)
- Hand in Exercises for every module using online system; details will follow on Etherpad. *Note: This is partly for tracking participation, but mostly for us to provide additional help.*
- Use this format for filenames:
  - lastname_firstname_exerciseX (e.g., **robinson_mark_exercise1.rmd —> robinson_mark_exercise1.html**)
  - lastname_firstname_exerciseX_questionY (e.g., **robinson_mark_exercise1_question2.rmd —> robinson_mark_exercise1_question2.html**)

Modules

- **Thu 23 PM**: Rmarkdown, sequences (FASTA/FASTQ), automating things (writing functions), loops [+ lecture technologies]
- **Fri 24 AM**: Operations on genomic ranges (Bioconductor)
- **Fri 24 PM**: data.frame operations [+ lecture: clustering / dimension reduction]
- **Tue 28 PM**: visualisation with ggplot2
- **Wed 29 AM**: Pipeline with single-cell data
- **Wed 29 PM**: “R Topics” session (self-directed in groups)