Introduction to Scientific Computing: A Crash Course

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Quantitative and Systems Biology

University of California, Merced

Thanks to UC Merced Women in STEM!!!!

- Special thanks to the organizers:
  - Kinsey Brock
  - Megha Suswaram
  - Melanie LeGro
  - Maha Zaman

Thanks to the MERCED Cluster Team!

- **Sarvani Chadalapaka, HPC administrator**
- **Jeffrey D. Weekley, Director of CyberInfrastructure & Research Computing**

Who are we?

- Doctoral Candidates at the University of California, Merced
  - Quantitative and Systems Biology Graduate Program
  - Graduating Summer 2018

Who are we?

- Travis J Lawrence evolutionary biologist with interests in developing methods to resolve deep branching phylogenetic relationships

- Dana L Carper environmental microbiologist with interests in symbiotic relationships between plants and their microbiomes

Why command line?

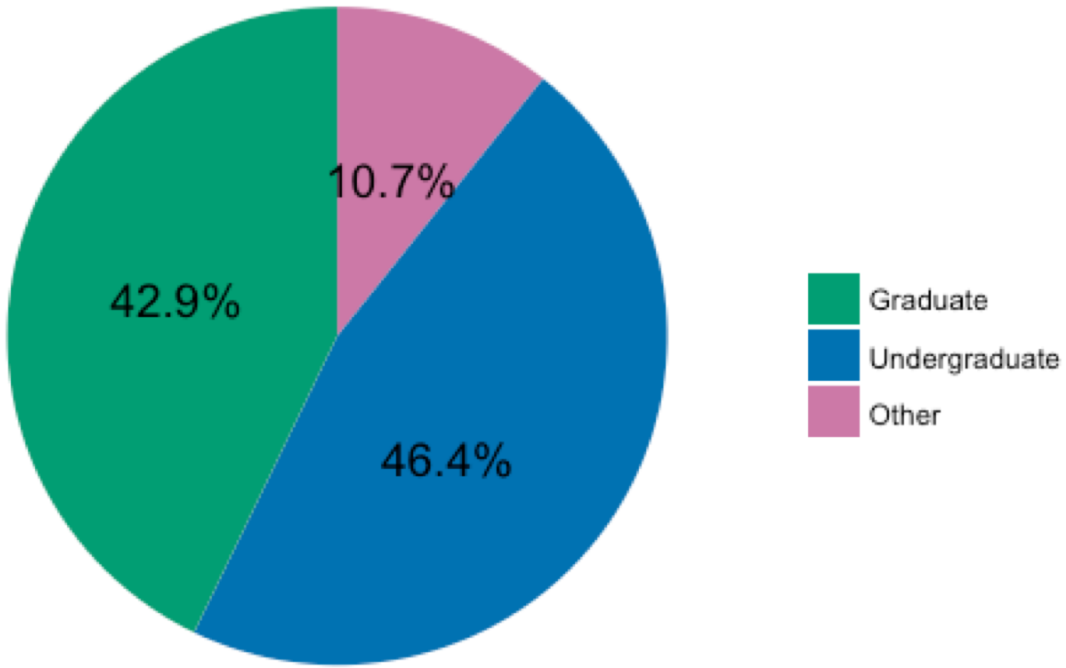
- Scientific data often comes as text files (or Flat files)
  - easily manipulated using command line
- Newer techniques are producing larger amounts of data
  - Harder to work with in conventional ways
- Issues have been found with software that is commonly used

What to expect from this course

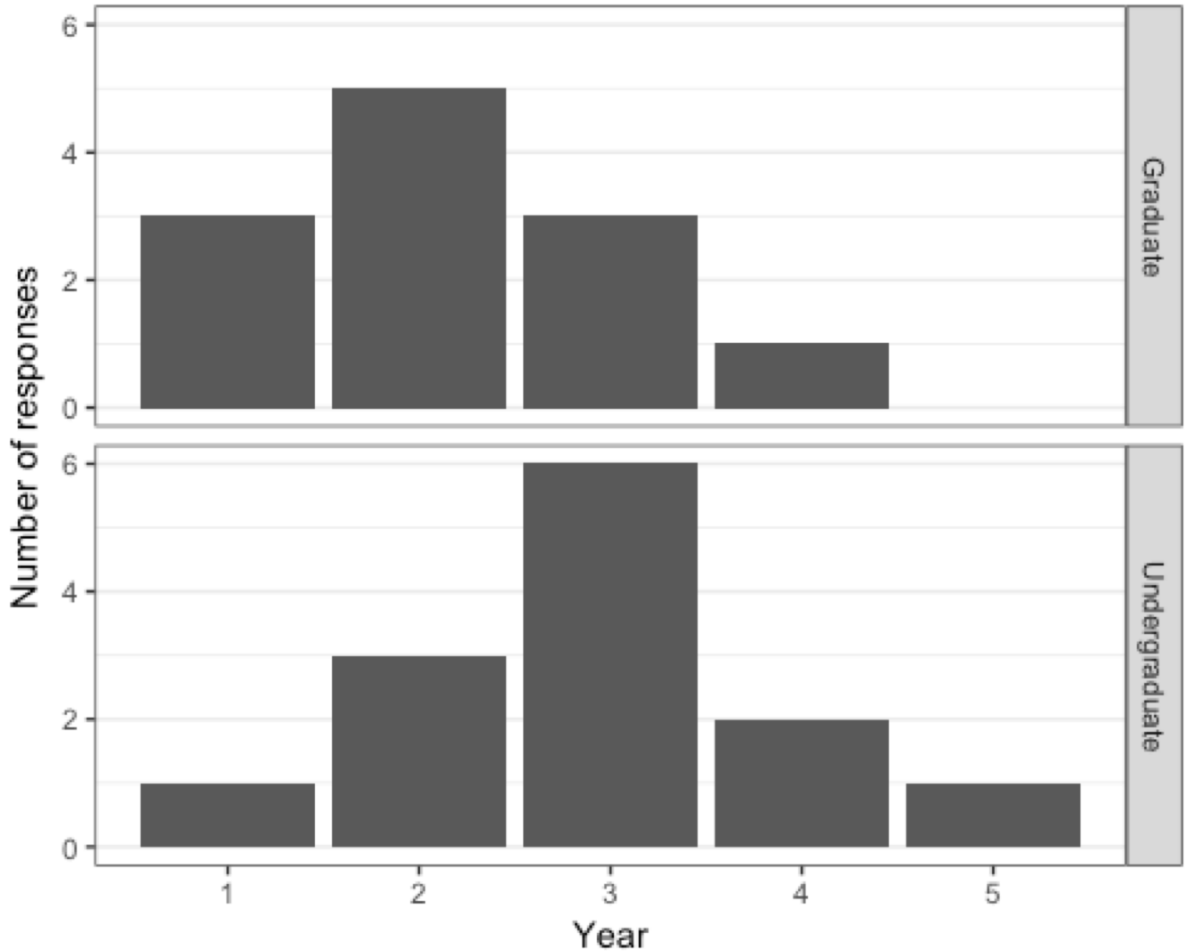
- At the end of this Course:
  - An understanding of using and the uses of a terminal
  - Familiarity with installing programs from source code
  - Ability to manipulate text files using command line
  - Have an understanding of sequence file structure and how to work with these files
  - A basic introduction to computer programming logic
  - Develop fundamental skills for writing scripts in python

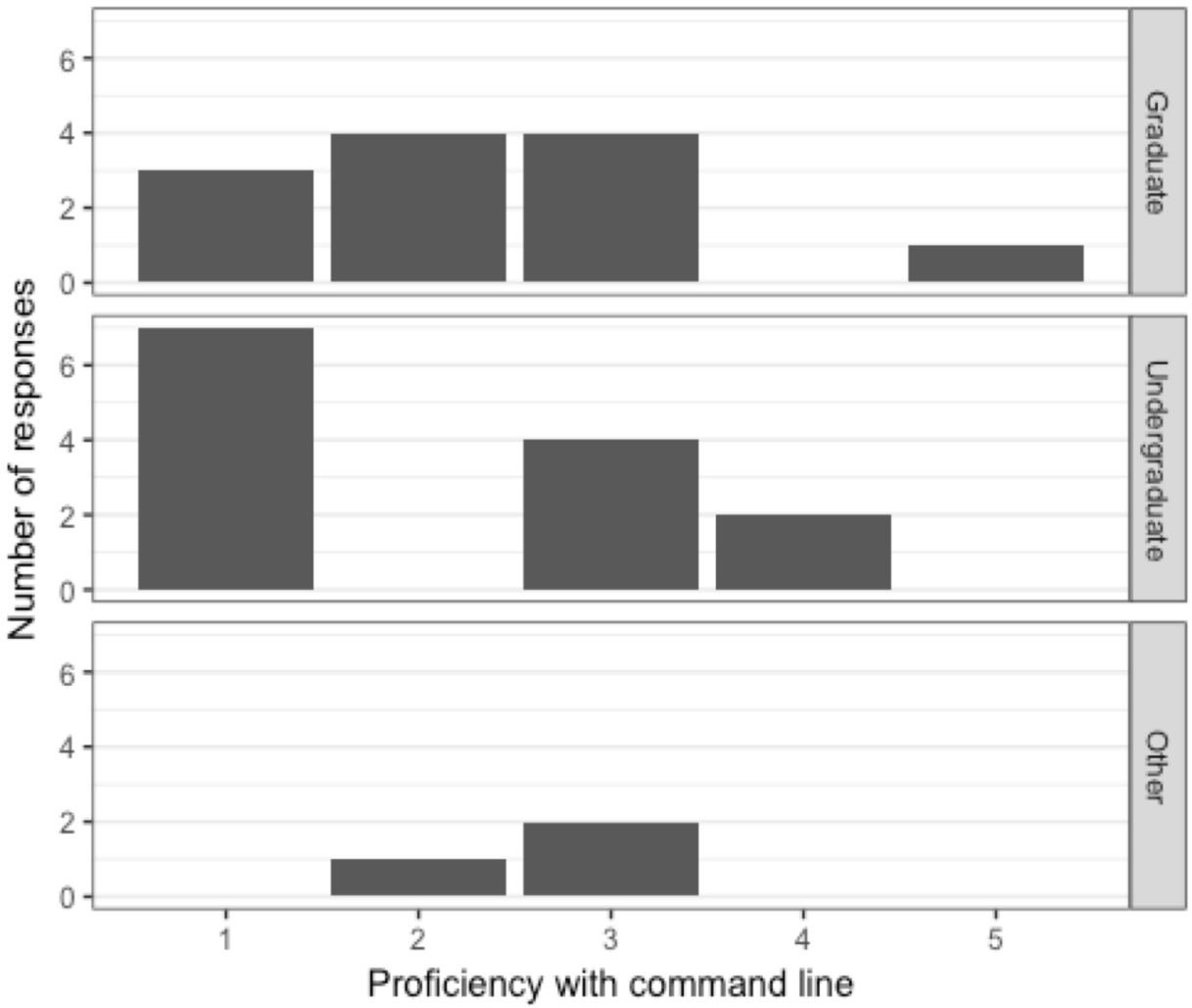
Don’t worry if this seems hard!

- Like any skill it takes time to develop
- Practice makes it easier



Other=Postdocs, faculty and Scientists




Graduate
Undergraduate
Other
Number of responses
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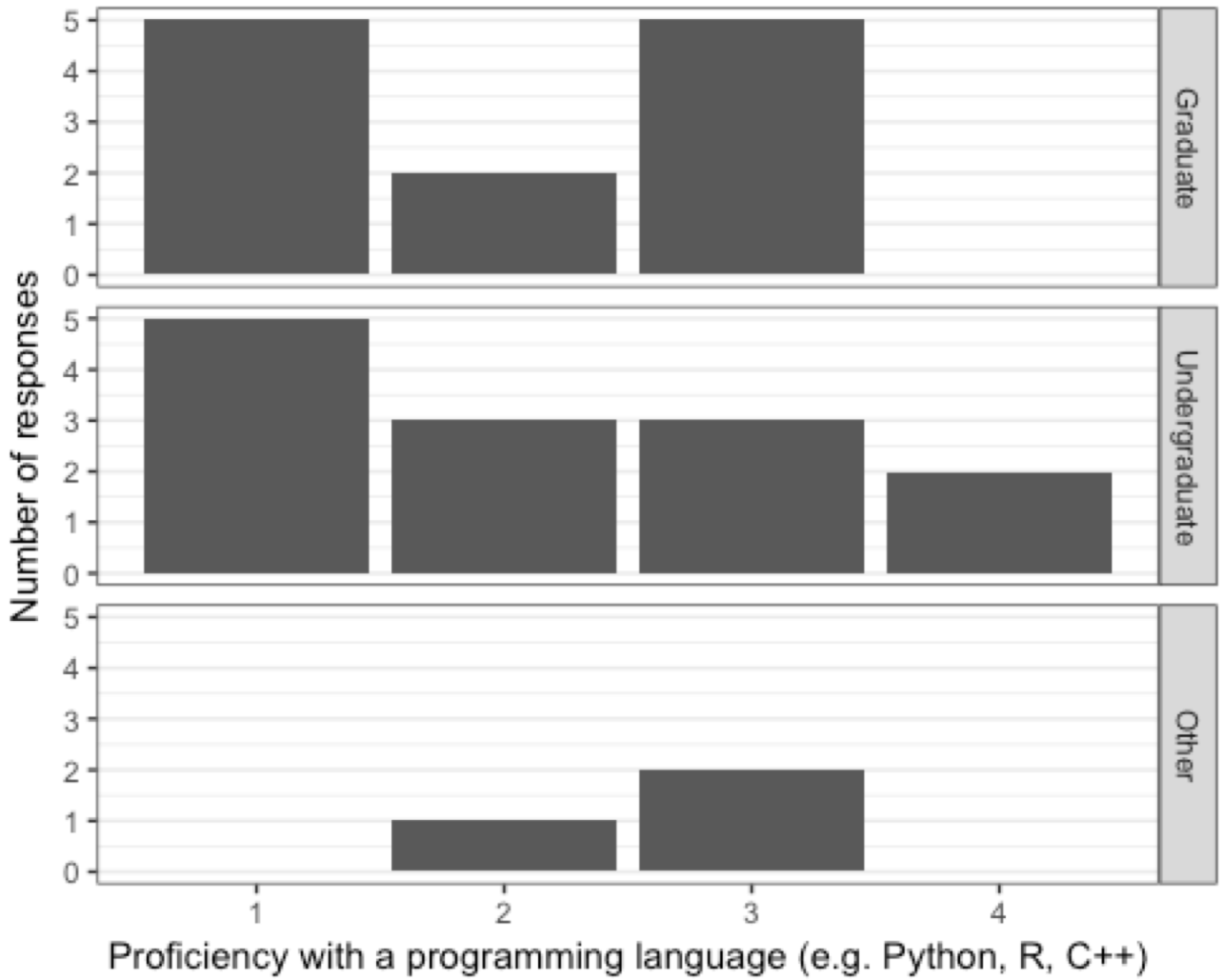
Proficiency with command line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Proficiency with a programming language (e.g. Python, R, C++)

- Please navigate to the following web address:
- https://tlawrence3.github.io/Introduction-to-Scientific-Computing/

- Click on the link that says download

- Double click on the zip file to get a folder containing all slides, worksheets and data needed for this workshop