Fundamentals of Bioinformatics workshop

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Bioinformatics scientist

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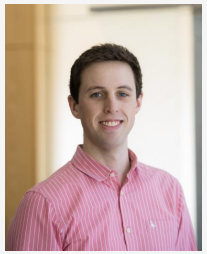
Website: https://sites.dartmouth.edu/cqb/projects-and-cores/data-analytics-core/

December 2021

The Data Analytics Core

Personnel:

James O'Malley, PhD
Faculty Director



Owen Wilkins, PhD
Bioinformatics Research Scientist

Shannon Soucy, PhD
Senior Research Scientist

Tim Sullivan, BA
Bioinformatics Research Scientist

What we do:

Genomic & bioinformatic data analysis to the CQB & Dartmouth research community

Services:

Data Analysis

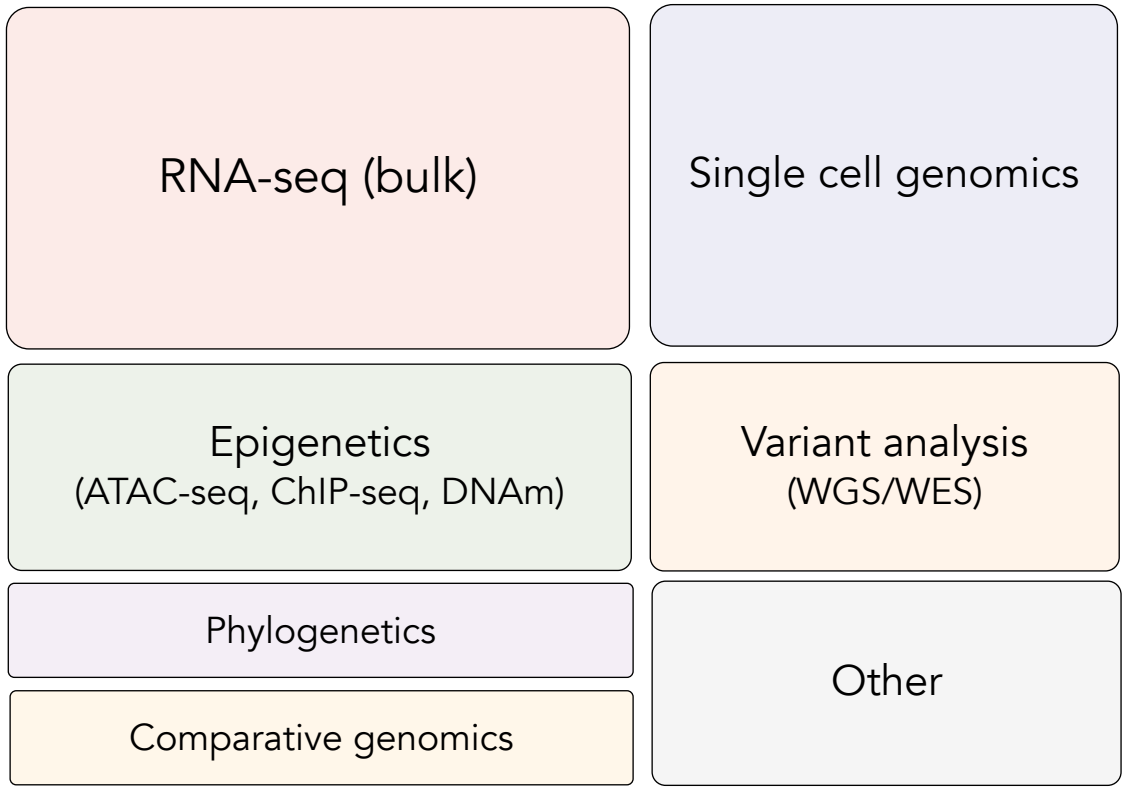
Publication & grant support

Bioinformatics training (workshops)

Bioinformatics analysis services

CQB Center for Quantitative Biology

Main services:



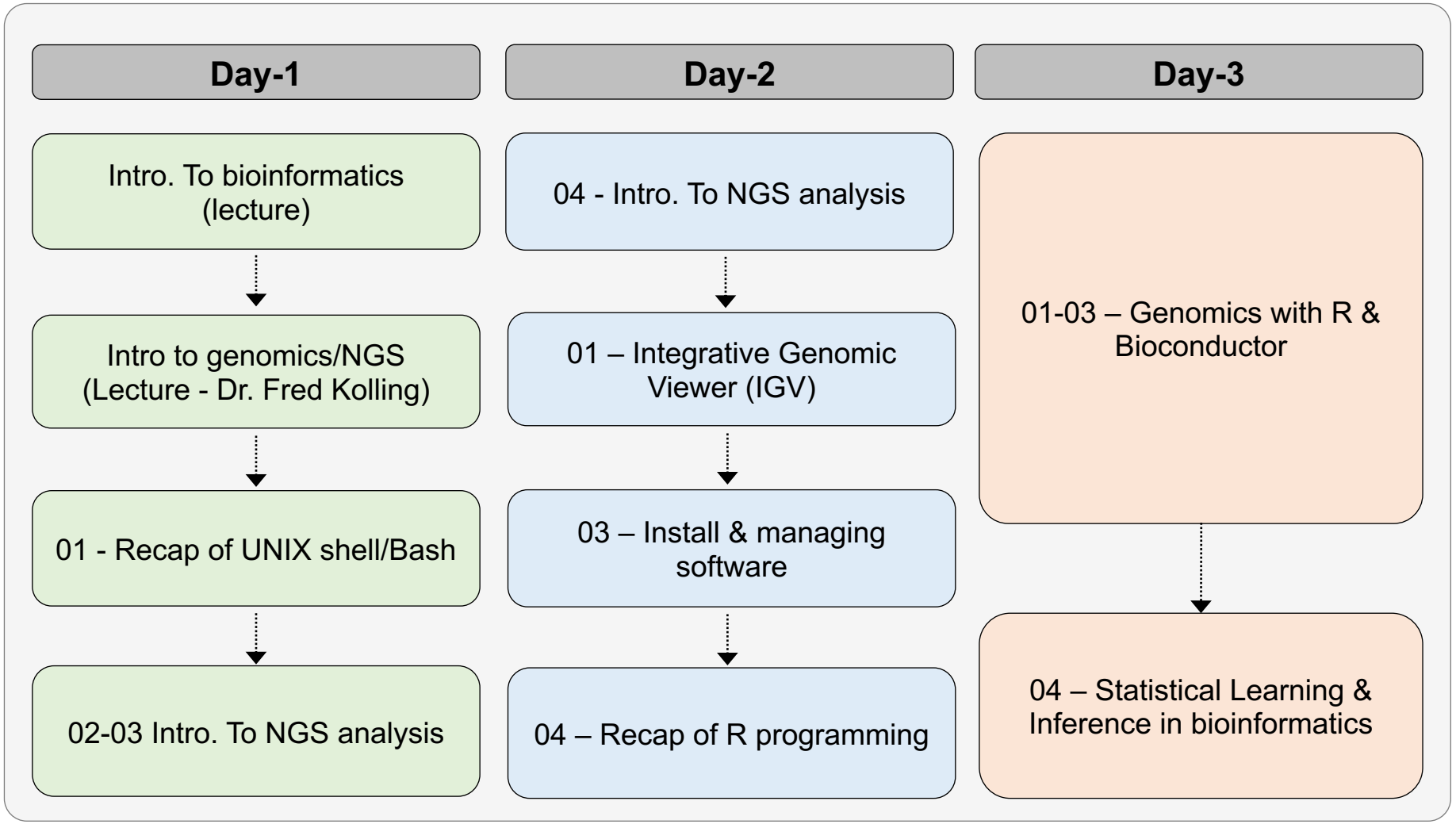
Core users:

Department	% of users
Molecular & Systems Biology	40%
Microbiology & Immunology	27%
Biochemistry & Cell Biology	7%
Epidemiology	6%
Surgery/Medicine	7%
Neurology	3%
External	10%

- Many labs closely associated with Norris Cotton Cancer Center

Dartmouth-Hitchcock NORRIS COTTON CANCER CENTER

Workshop outline



Schedule

- Can be found at: https://github.com/Dartmouth-Data-Analytics-Core/Bioinformatics_workshop-Dec-2021/blob/master/schedule.md
- 12pm-5pm each day
- Schedule is best guess, and we may deviate from it based on time
- If you will be absent for a session, just let us know

Logistics I

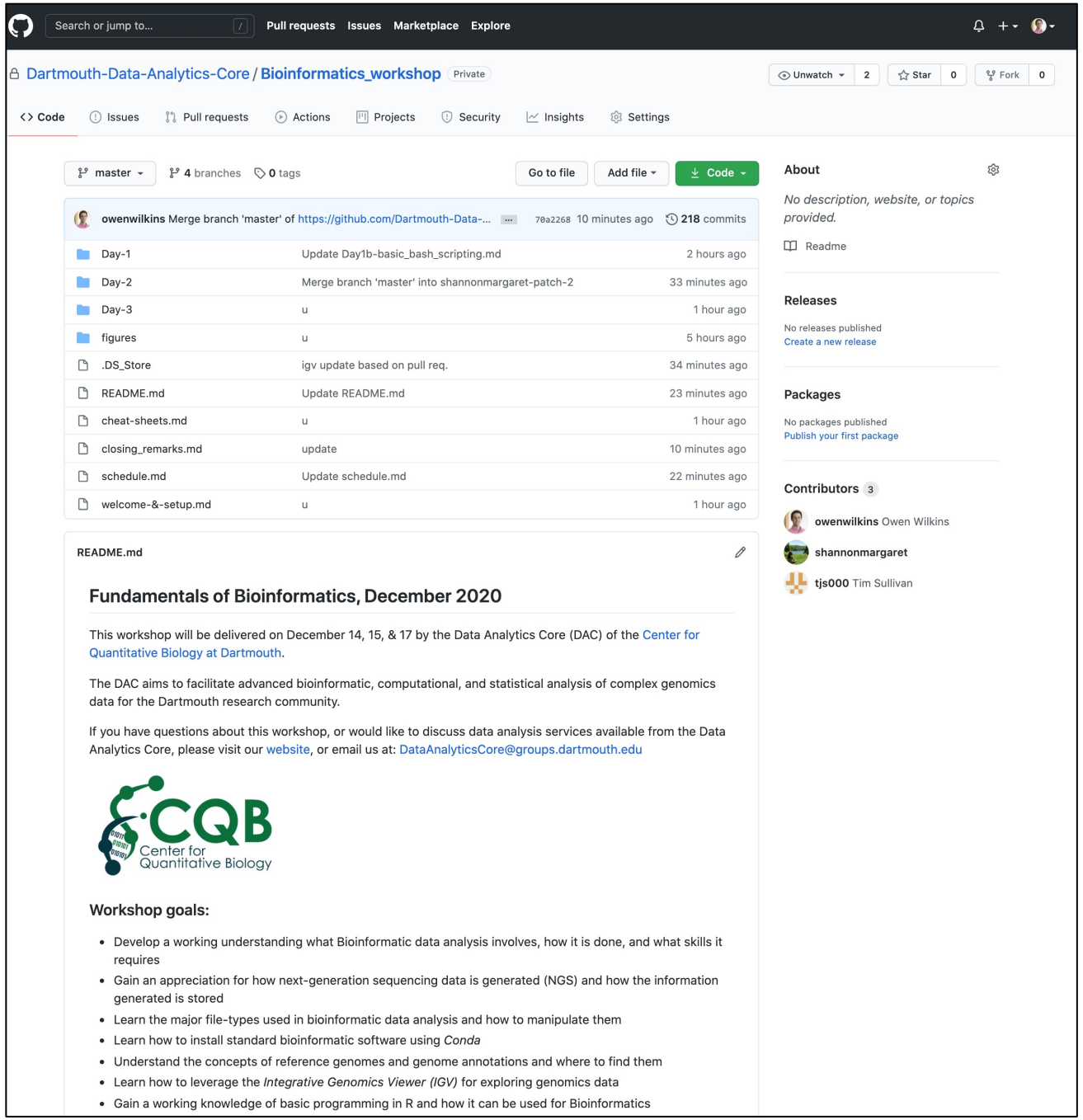
- Course materials are all online (and will stay there):

  https://github.com/Dartmouth-Data-Analytics-Core/Bioinformatics_workshop-Dec-2021

- You should have the repo downloaded locally

- Day 1 we will be copying Bash code from markdowns (.md) into the terminal, or into R Studio

- This is deliberate, and will help you learn how to organize code



Logistics II

- **When working in the terminal:**

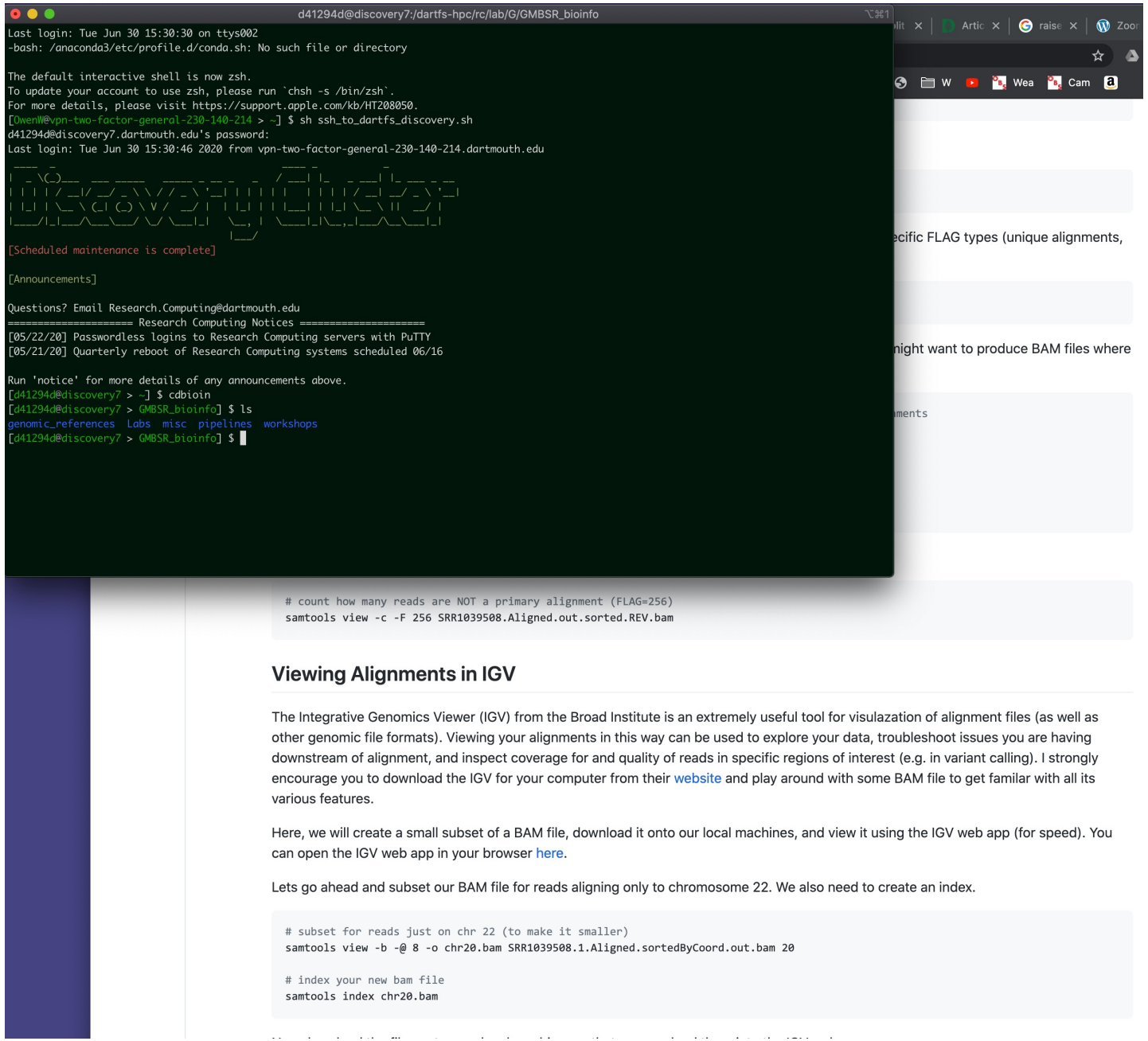
- Multiple tabs open

- Terminal window
  (ssh to discovery7)

- Web browser to GitHub repo

- If you finish: edit the code, try different options, generate scripts

- Use the ***cheat sheets!***



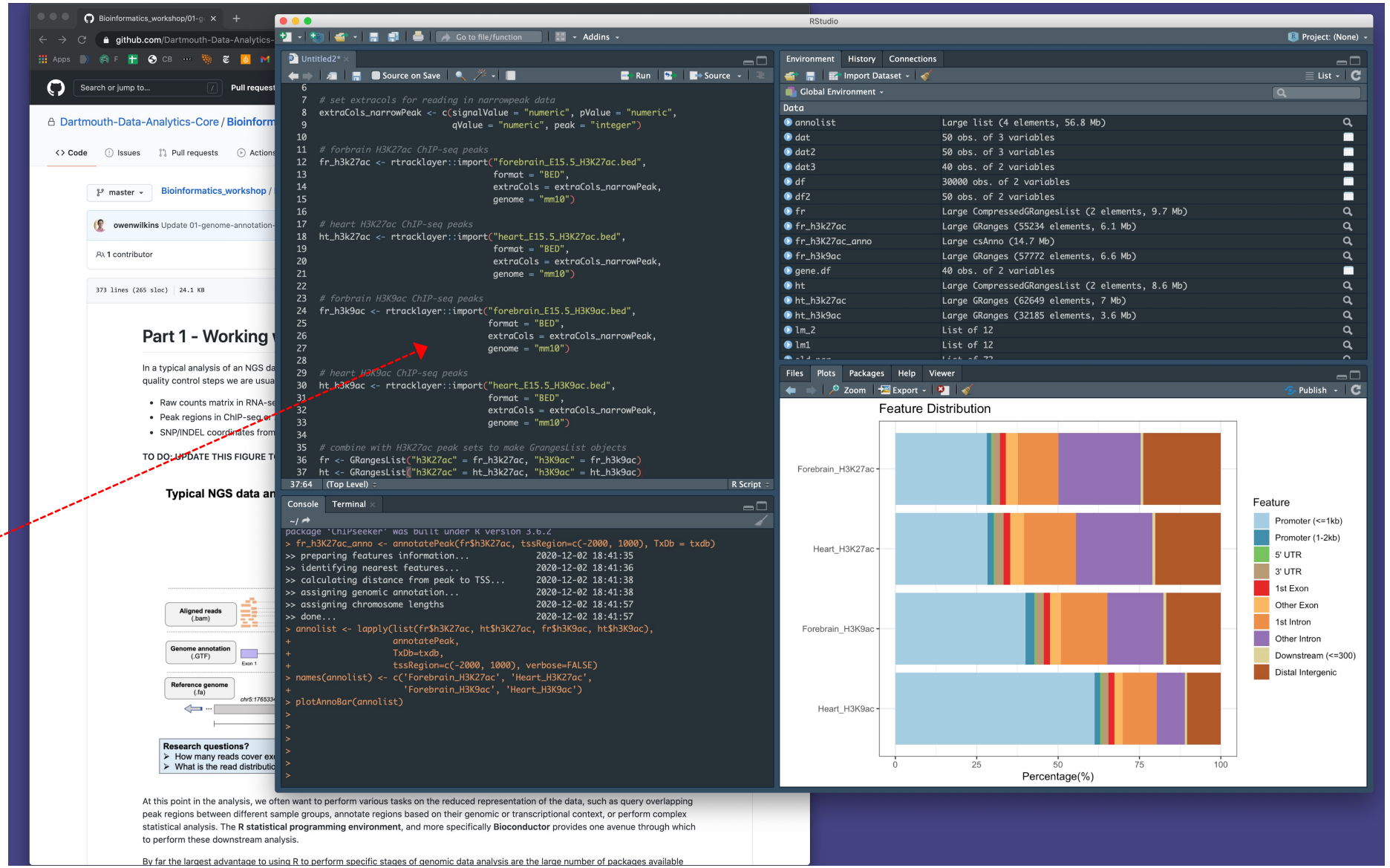
Logistics III

- **When working in R/Rstudio:**

- Multiple tabs open (including GitHub repo)

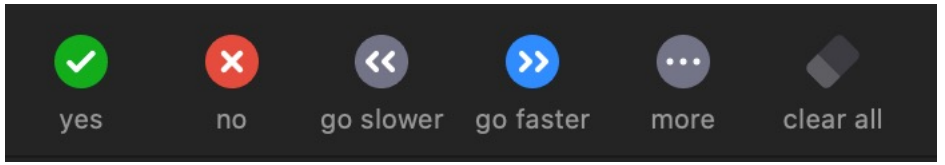
- Copy and paste R code into scripting window

- Save the scripts you generate as .R files

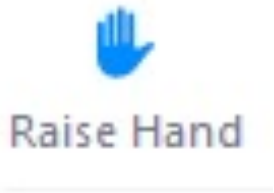


Logistics IV

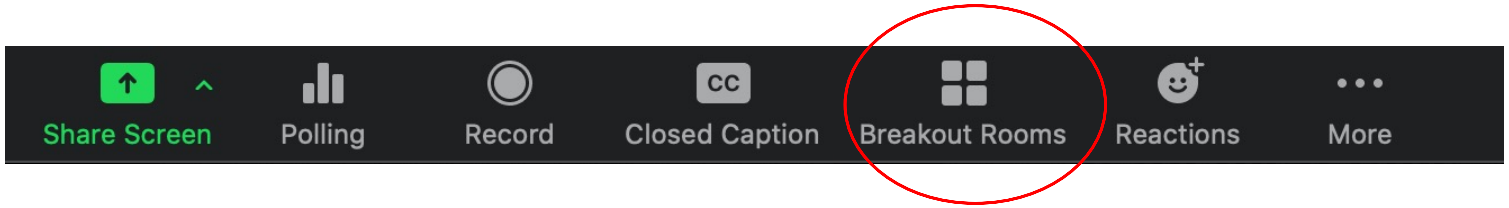
- **Use buttons in *Participants* tab in zoom**



- **You'll be muted, but if you want to ask a question, just raise your hand**



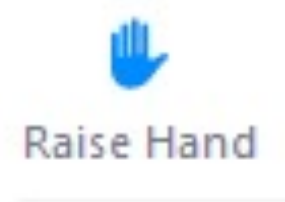
- **We'll be using *breakout rooms (BRs)***
  - We will use these when we split up to run code independently
  - We've tried to pair everyone based on experience
  - If your stuck, message us, and we will come help you in your (BR)
  - When we are going to move on, breakout rooms will close



- **Please be courteous on zoom..**

How to get help?

- **Raise your hand in zoom** (bottom right, participants tab)



- **Use the slack channel to message one of us or the TAs**
  - Use the ***general*** channel if it might benefit everyone
  - Message us directly if its specific

- **If all else fails, email us:**
  - DAC: DataAnalyticsCore@groups.dartmouth.edu
  - Shannon Soucy (Shannon.Margaret.Soucy@Dartmouth.edu)
  - Tim Sullivan (Timothy.J.Sullivan@dartmouth.edu)
  - Owen Wilkins (omw@Dartmouth.edu)

Questions?

…then.. Introductions!

Name, department/program, why are you taking the workshop?