## Tutorial 2 Summary

**HPC at NYU**

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### Accessing software with Environment Modules

**Job scripts and how to reserve resources**

- Introduction to job scheduling
- Submitting a job with qsub
- Requesting resources
- Requesting GPUs
- Using compute nodes interactively
Advanced queuing options

Monitoring batch jobs

Monitoring batch jobs - qstat

What is running on the cluster, and where?
Interpreting pbstop

When will my job start?

Why won't my job start?

Where did my output go?

Canceling batch jobs

Pulling it all together - an example job

Pulling it all together - an R example

Summary

- You can compile, edit scripts and view results on the login nodes, but **computational work should be run on the compute nodes**
- You can access compute nodes with `qsub`
  - Either via a job script, or interactively
  - Compute nodes are allocated to jobs by the scheduler, so your job might not start immediately
  - Jobs must request resources, but mostly need not specify a queue.
  - Requesting just slightly more than when you expect to need is generally the best practice
- **Short jobs get higher priority, and short or small jobs are easier to schedule quickly**
- You can monitor your job's progress with `qstat` or `pbstop`
- Software is managed by Environment Modules
  - Use `module avail` to find software packages
  - And `module load` to load them into your environment
    - including within job scripts!
  - Use `module purge` to return to a clean environment before loading a new set of modules
• Other useful commands are 'module list' and 'module show'