## Quick Links

### HPC Home
- Getting an account
- Gentle Introduction to using HPC
- Getting started on Prince
- Prince How-to Articles

### Logging in
- Windows
- Mac / Linux

### Clusters and Storage
- Prince (HPC)
- Dumbo (Hadoop)
- Brooklyn (OpenStack)
- Dalma (NYU Abu Dhabi)

### Transferring data to/from the clusters
- Transferring data to/from Prince cluster using Globus

### Submitting jobs with sbatch

### Available software

### Licensed Software Available on the HPC Cluster
Running jobs on the Prince Cluster

Accessing the Prince Cluster
- From Windows workstation
- From Mac workstation

Software and Environment Module
- Job script and resource request
  - Introduction to job scheduling
  - Submitting jobs with sbatch
  - Requesting resources
  - Using computing nodes interactively

Monitoring batch jobs
- Monitoring batch jobs - squeue
- What is running and where? slurmtop

Canceling your jobs

Compiling your own software

Putting all pieces together
- An Amber example
- A 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 `srun`
    - 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 `squeue, sstat, sacct, scontrol` or `slurmtop`
- 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'