Introduction to RNA-seq using High-Performance Computing (HPC)

Harvard Chan Bioinformatics Core

in collaboration with

HMS Research Computing

https://tinyurl.com/hbc-rnaseq

Learning Objectives

✓ Describe best practices for designing a bulk RNA-seq experiment

✓ Describe steps in an RNA-seq analysis workflow (from sequence data to expression quantification).

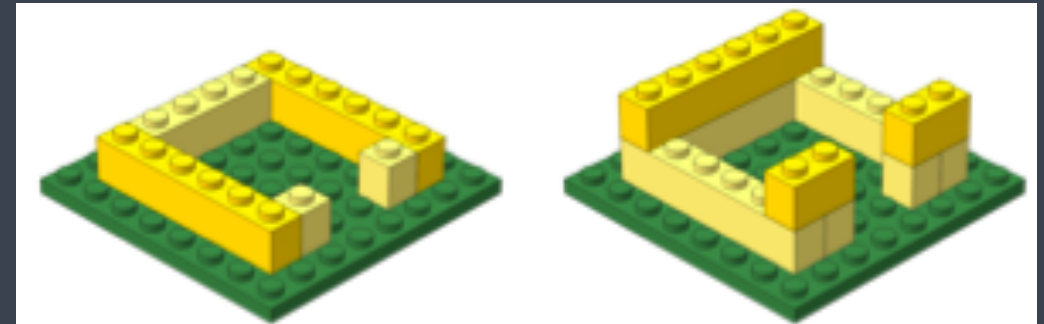✓ Implement shell scripts on a high-performance compute cluster to perform the above steps.

We won't be covering how to perform differential gene expression (DGE) analysis on count data in this workshop.

Survey
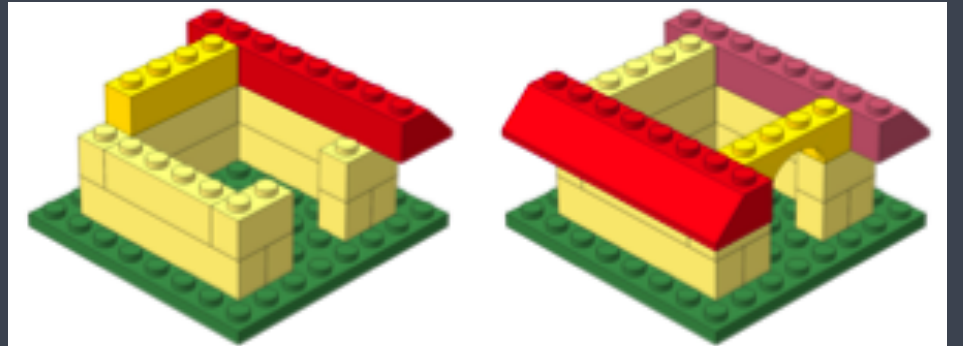
https://tinyurl.com/hbc-rnaseq-exit

R and DGE

Topic	Category	Date	Duration	Prerequisites
Introduction to RNA-seq Part I (Experimental design -> Raw data -> Count matrices)	Advanced	March 29th, April 1st & 5th	Three 2.5h sessions	Shell
Introduction to R	Basic	April 19th, 22nd, 26th & 29th	Four 2h sessions	None
Bulk RNA-seq Part 2 (Differential Gene Expression on expression counts)	Advanced	May 6th, 10th, 13th & 17th	Four 2h sessions	R

https://bioinformatics.sph.harvard.edu/upcoming-workshops

Get an O2 account!

Search IT services and kno   🔍

O2 Cluster Account

Description ⌄

What does it do?

Get an account on O2, the HMS High Performance Compute cluster

Available To ⌄

Who is eligible?

Any HMS or HMS-affiliated researcher who has an HMS eCommons account.

Cost ⌄

What does it cost?

There is no cost to labs whose PI has a primary or secondary faculty appointment in an HMS Quad department.

If the PI of your lab does not have a primary or secondary faculty appointment in an HMS Quad department, cluster usage will be charged for beginning later in 2021. Please see the following page for current details about rates: https://it.hms.harvard.edu/rc/core/rates.

Support ⌄

Please fill out the online help request form, or email rchelp@hms.harvard.edu.

How to Access ⌄

How do I get it?

Two-factor authentication is required to request an account on O2, as well as for O2 logins once your account is created. Harvard University uses a mobile app called Duo that makes the process quick and easy. Even if you already use Duo for HarvardKey, you will still need to setup a Duo profile for HMS.

- Setup HMS two-factor Authentication (HMS Duo Mobile)
- Reactivate or Reconnect HMS two-factor Authentication (HMS Duo Mobile)

Once you have Duo set up, Click the "Get Service" link to login and complete the request form.

Get this service   Learn more

Don't see what you're looking for?

Thanks!

- Kathleen Chappell and Andy Bergman from HMS-RC

- [Data Carpentry](#)

Contact us!

HBC training team: hbctraining@hsph.harvard.edu

O2 (HMS-RC): rchelp@hms.harvard.edu

HBC consulting: bioinformatics@hsph.harvard.edu

Twitter

HBC: @bioinfocore

HMS-RC: @hms_rc