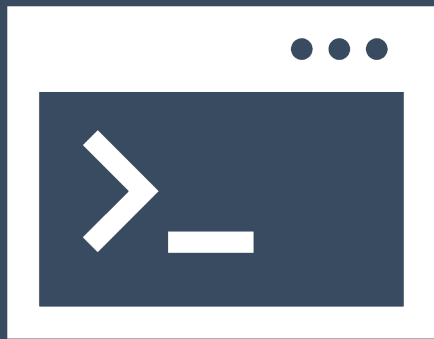


# Introduction to the command-line interface (shell)

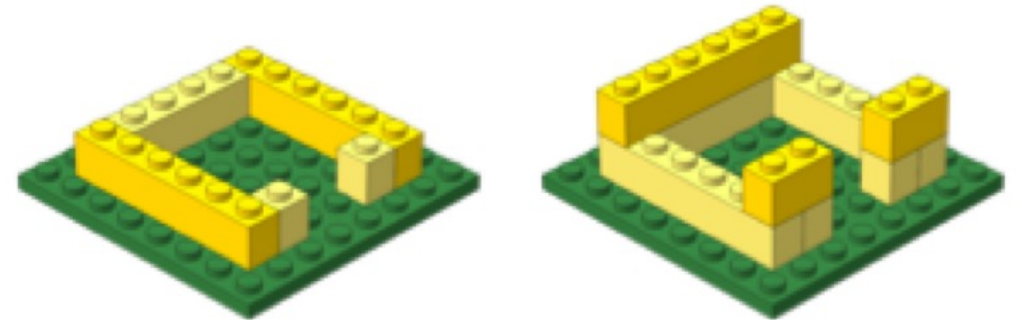
<https://tinyurl.com/hbc-shell-online>



**Harvard Chan Bioinformatics Core**  
in collaboration with  
**HMS Research Computing**



# Learning Objectives



- ❖ Learn what a “shell” is and become comfortable with the command-line interface
  - Find your way around a filesystem using written commands
  - Work with small and large data files
  - Become more efficient when performing repetitive tasks
- ❖ Understand what a computational cluster is and why we need it



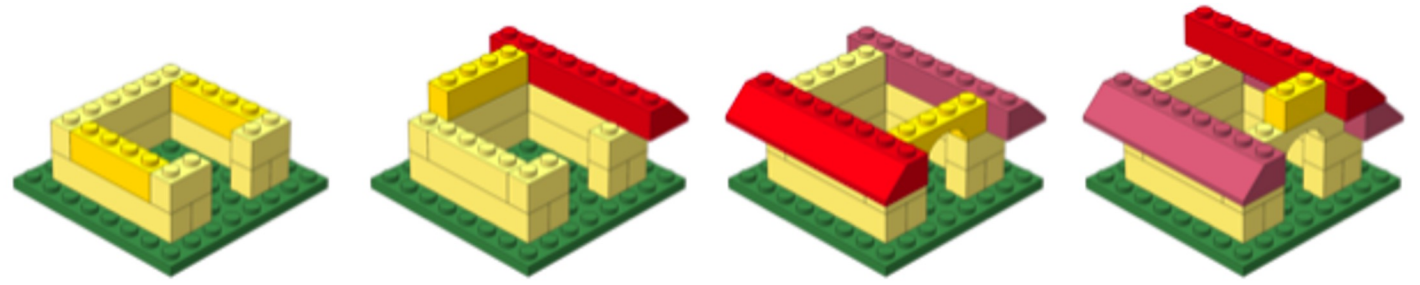
*Image source: Balboa Capital Blog*

If you plan to process raw high throughput sequencing data yourself, you will need to learn shell.

# Exit survey

<https://tinyurl.com/hbc-shell-exit>

# Keep building!



- ❖ Upcoming HBC advanced shell-based workshops:
  - ❖ Introduction to Variant Calling
    - ❖ May 28<sup>th</sup> , May 31<sup>st</sup>, June 4<sup>th</sup>, June 7<sup>th</sup> (in-person)
    - ❖ Paired tumor/normal samples for variant discovery
  - ❖ Understanding chromatin biology using high throughput sequencing
    - ❖ June 18<sup>th</sup>, June 21<sup>st</sup> and June 25<sup>th</sup> (online)
    - ❖ ChIP-seq, CUT&RUN, ATAC-seq



# Get an O2 account!

[Home](#) > [Service Catalog](#)

Search IT services and kn

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](mailto: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.

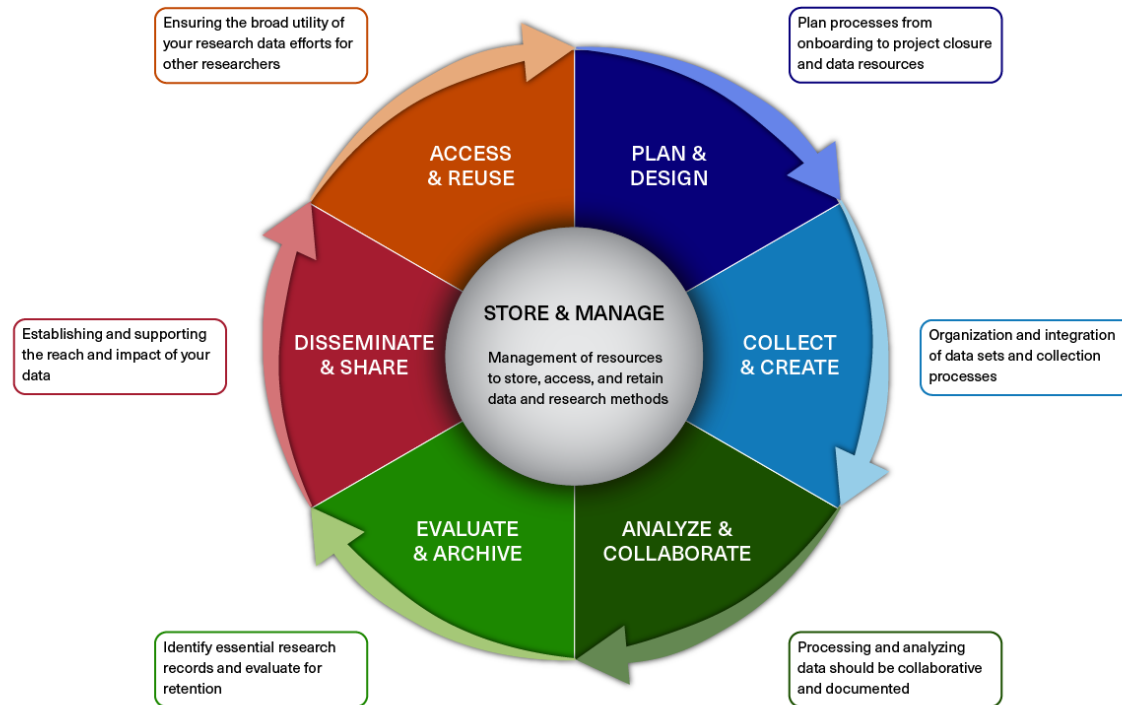
Get this service

Learn more

Don't see what you're looking for?

# Research Data Management (RDM)


## BIOMEDICAL RESEARCH DATA LIFECYCLE





# Spring 2024 Data Lifecycle Training

## Plan & Design


**April 17**   
Writing a Data Management  
and Sharing Plan for  
Grant Applications


**April 24**   
Principles of Data  
Stewardship

**May 1**   
Don't Leave Yet! Research  
Data Offboarding Done Right

**May 8**   
Don't Leave Yet! Research  
Data Offboarding Done Right


## Collect & Analyze


**February 21**   
Basic Shell

**March 6**   
Using Metadata to Find,  
Interpret & Share Your Data


**March 13**   
Intro to MATLAB


**March 13**   
Introduction to GIS


**April 17**   
Intermediate Shell


**May 15**   
Active Project Version  
Control with Git


## Store & Evaluate

**February 7**   
The When, Where, and  
How of Data Storage


**February 27**   
Introduction to the  
General Records Schedule


**March 20**   
Managing Data Transfer  
Between Collaborators


**March 26**   
Managing Your  
Paper Records


**May 7**   
Managing Your  
Electronic Records



## Share & Publish

**January 16**   
Data Sharing and Reuse  
on the Vivli Platform

**February 13**   
Introduction to  
Harvard Dataverse

**February 15**   
Research Management  
Using the Open Science  
Framework

**April 10**   
Achieving FAIR Data:  
Selecting a Repository  
for Your Data

 In-person  
 Virtual



**Learn More & Register:** [bit.ly/rdmwg-calendar](https://bit.ly/rdmwg-calendar)



<https://datamanagement.hms.harvard.edu/about/news-events/rdmwg-calendar>



# Better RDM practice benefits you

## ❖ HMS Data Management LMA

❖ Webpage: <https://datamanagement.hms.harvard.edu>

❖ [Sign up](#) for quarterly email updates

## ❖ Harvard-wide Research data Management

❖ <https://researchdatamanagement.harvard.edu/>

# Join us for HBC Community Breakfast!

- ❖ An opportunity to get to know others in the community
- ❖ Free food and beverages
- ❖ Great conversations



**Thursday June 6<sup>th</sup>, 2024  
9:00 to 10:30am**

**More Info:**

<http://bioinformatics.sph.harvard.edu/breakfast/>

# Thanks!

- ❖ Kathleen Chappell and Andy Bergman from HMS-RC
- ❖ Data Carpentry

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*These materials have been developed by members of the teaching team at the Harvard Chan Bioinformatics Core (HBC). These are open access materials distributed under the terms of the Creative Commons Attribution license (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.*

# Contact Us

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- ❖ *HBC consulting:* [bioinformatics@hsph.harvard.edu](mailto:bioinformatics@hsph.harvard.edu)
- ❖ *O2 (HMS-RC):* [rchelp@hms.harvard.edu](mailto:rchelp@hms.harvard.edu)