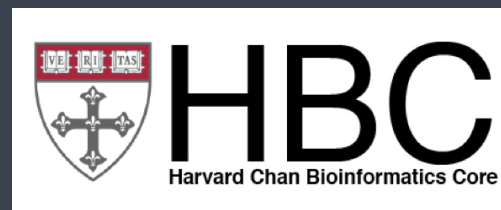


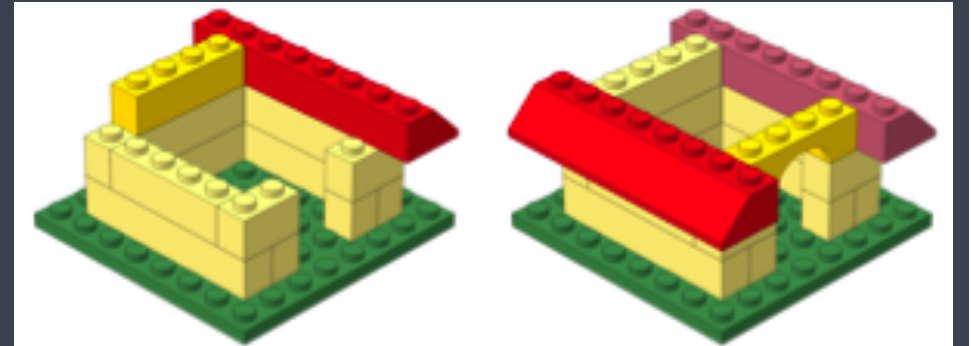
Introduction to Single-cell RNA-seq analysis

Harvard Chan Bioinformatics Core



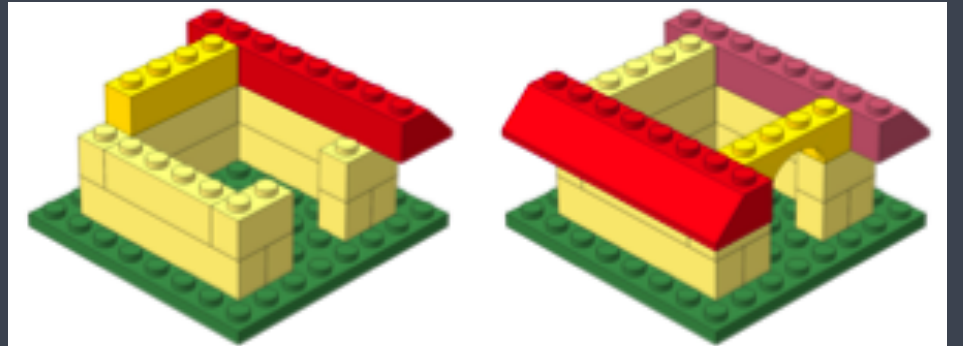
<http://tinyurl.com/hbc-scRNAseq-feb2024>

Learning Objectives



- ✓ Describe best practices for designing a single-cell RNA-seq experiment
- ✓ Describe steps in a single-cell RNA-seq analysis workflow.
- ✓ Use Seurat and associated tools to perform analysis of single-cell expression data, including data filtering, QC, clustering, and marker identification

Survey



<https://tinyurl.com/scRNAseq-online>

Useful Resources

Computational packages for single-cell analysis:

<http://bioconductor.org/packages/devel/workflows/html/simpleSingleCell.html>

<https://satijalab.org/seurat/>

<https://scanpy.readthedocs.io/>

<https://github.com/seandavi/awesome-single-cell>

Online courses:

<https://hemberg-lab.github.io/scRNA.seq.course/>

<https://github.com/SingleCellTranscriptomics>

Resources for scRNA-seq Sample Prep:

<https://www.protocols.io/>

<https://support.10xgenomics.com/single-cell-gene-expression/sample-prep>

<https://community.10xgenomics.com/>

Interested in additional training?

All workshop materials are online: <https://hbctraining.github.io/main>

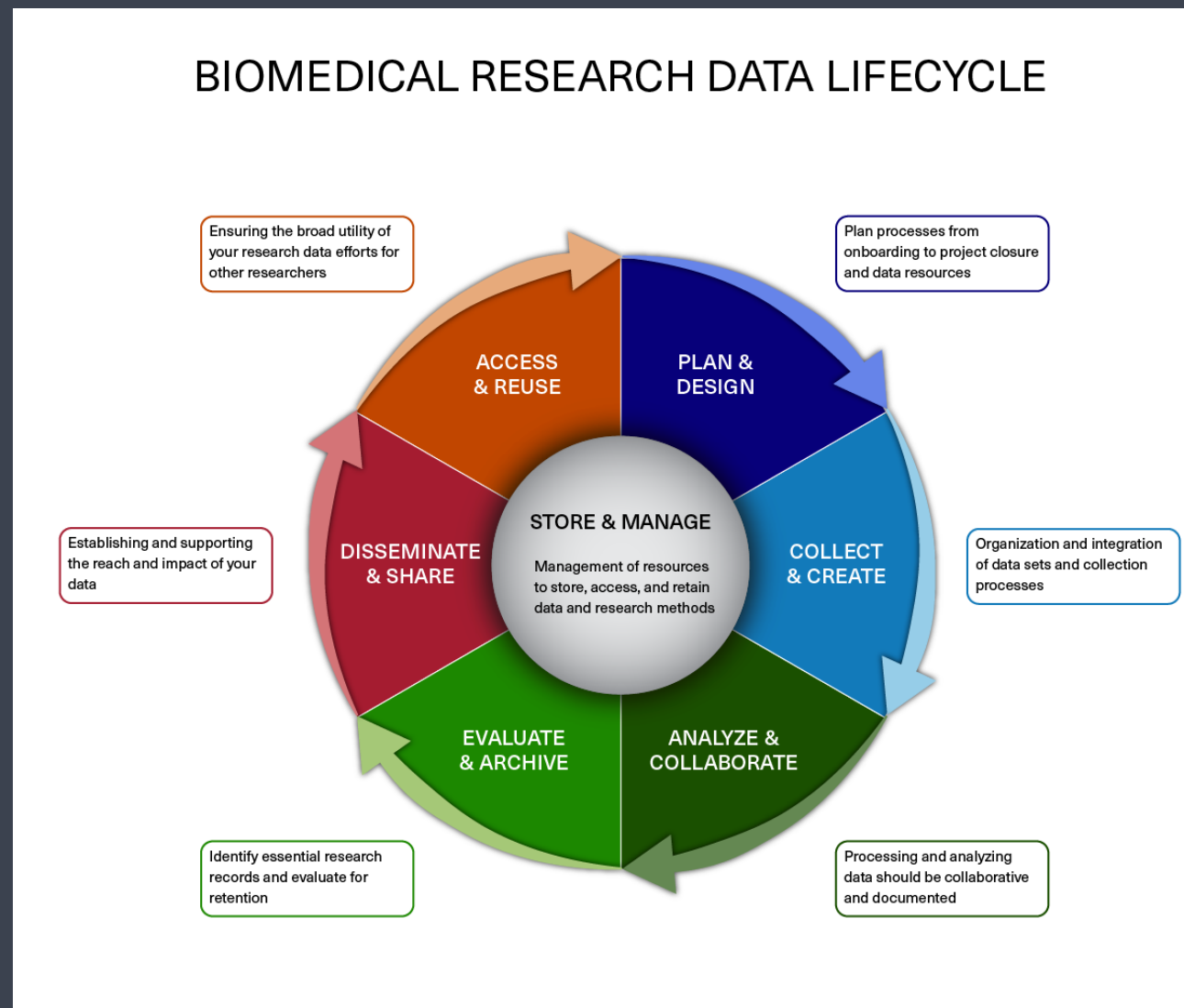
Sign up for our mailing list:

<https://tinyurl.com/hbc-training-mailing-list>

Data Management

- HMS Data management -
 - Webpage: <https://datamanagement.hms.harvard.edu/>
 - [Click here to sign up for data management related emails](#)
 - Check out the [training schedule](#) for short workshops
- Harvard-wide Research Data Management -
<https://researchdatamanagement.harvard.edu/>

Data Management Short Workshops





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







Data Management Short Workshops

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

Interested in additional training?

<https://hbctraining.github.io/Training-modules/>

Short workshops: Current Topics in Bioinformatics

These workshops are free and open to all researchers at Harvard University and affiliated institutions.

- **Workshops** on bioinformatics methods & related skills.
- Once a month for 3 hours
- Hands-on workshops - be prepared with your MAC or Windows computer
- **Free and open to everyone at Harvard University and its affiliates**
- Will meet the **first Wednesday of the month** (with one exception) **online via Zoom**
- **Sign up at the links below to receive the workshop Zoom link**

Interested in additional training?

<https://hbctraining.github.io/Training-modules/>

Big data? Big computer! The skill set you need to succeed

Topic and Link(s) to lessons	Prerequisites	Date	Registration
The Foundation - Basic Shell	None	2/21/2024	Sign up!
Accelerate with Automation - Making your code work for you	The Foundation - Basic Shell	3/20/2024	Sign up!
Needle in a Haystack - Finding and summarizing data from colossal files	The Foundation - Basic Shell	4/17/2024	Sign up!
Shell Tips and Tricks on O2	The Foundation - Basic Shell	5/15/2024	Sign up!

Bioinformatics Community Networking Breakfast!



- *Free and open to the Harvard community*
- *Food is first-come-first-served*
- *No computers!*
- *Coming soon end of March!*

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

Thanks!

- Dr. Mandovi Chatterjee, Director, HMS Single Cell Core

Get (stay) in touch with us!

Training team ✉ : hbctraining@hsph.harvard.edu

Consulting ✉ : bioinformatics@hsph.harvard.edu

 [@bioinfocore](https://twitter.com/bioinfocore)

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.

