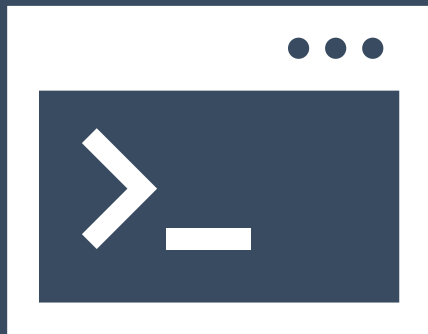


Differential expression analysis of Single Cell RNA-seq

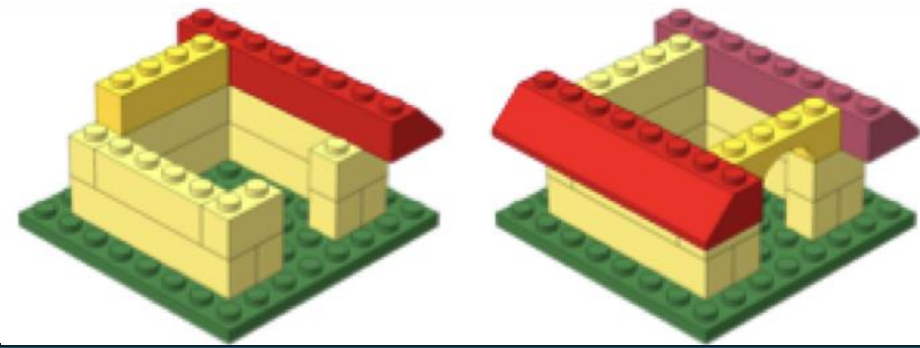
<https://tinyurl.com/DGE-analysis-scRNAseq>



Harvard Chan Bioinformatics Core



Workshop Scope



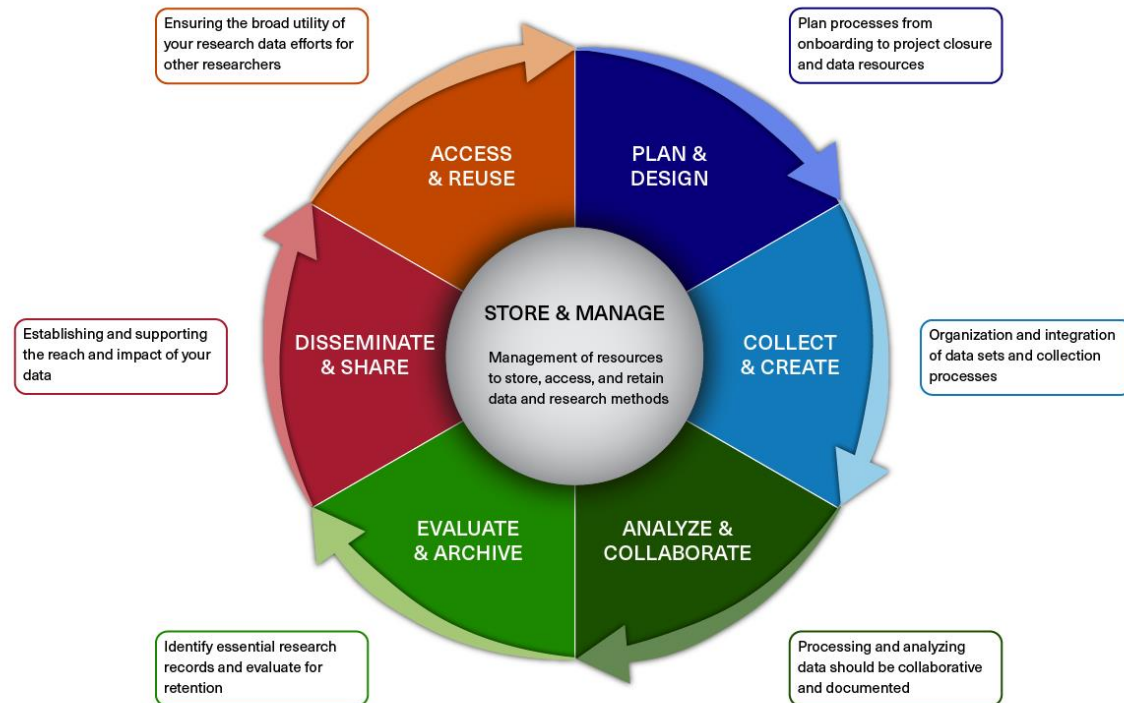
- ❖ Understanding considerations for when to use different DGE algorithms on scRNA-seq data
- ❖ Using FindMarkers to evaluate significantly DE genes
- ❖ Aggregating single cell expression data into a pseudobulk counts matrix to run a DESeq2 workflow
- ❖ Evaluating expression patterns of differentially expressed genes at the pseudobulk and single cell level
- ❖ Application of methods for evaluating differential proportions of cells between conditions

Exit survey

<https://tinyurl.com/hbc-scRNAseq-DGE-exit-survey>

Research Data Management (RDM)

BIOMEDICAL RESEARCH DATA LIFECYCLE



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/>


Fall 2024 Data Lifecycle Training

Plan & Design


September 24 
Managing Research
Data Efficiently


September 26 
Project and Lab
Onboarding


October 31 
Data Horror Stories:
Avoid the Nightmare


November 19 
Writing a Data Management
and Sharing Plan


Collect & Analyze

September 19 
Intro to MATLAB


October 10 
Research Computing:
Intro to Python


November 20 
Basic Shell


November 21 
Research Computing:
Intro to O2


December 5 
RCBio: easy and quick HPC
pipeline builder & runner

Store & Evaluate


October 22 
Introduction to the
General Records Schedule


October 24 
Computing Strategies
and Resources


November 22 
Managing Paper Records:
Off-Site Records Storage


December 17 
Managing Electronic
Records: Shared Drives
and Emails



Share & Publish

September 18 
Interact with your data
using RShiny

November 14 
Principles of Finding
and Citing Data

December 3 
Research Management:
Tools for Open Science

December 12 
Data Sharing in
Repositories

 In-person
 Virtual

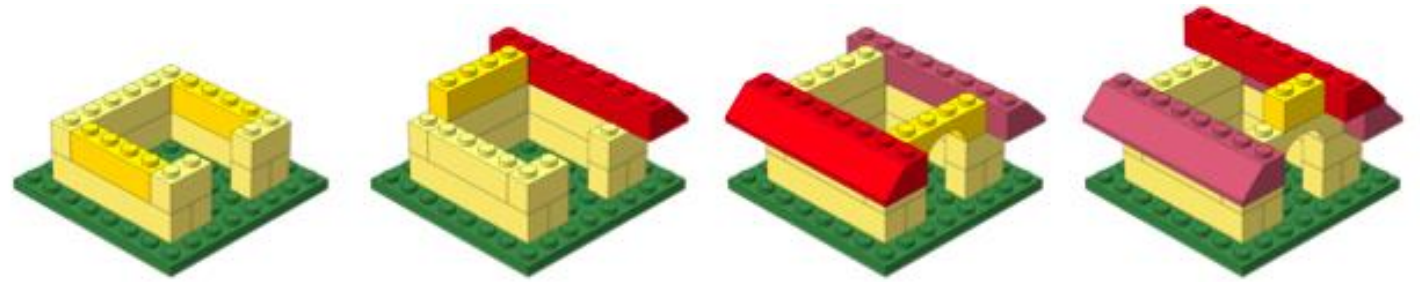


Learn More & Register
bit.ly/rdmwg-calendar



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

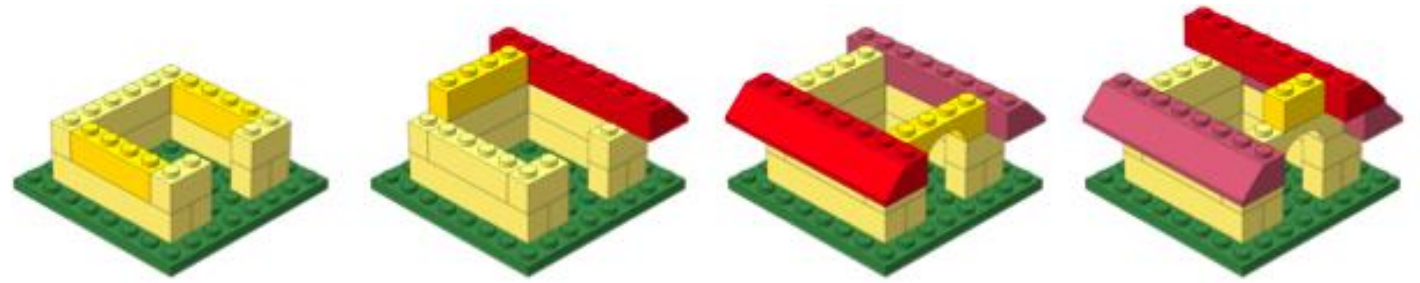
Keep building!



2024 schedule:

| Topic | Pre-requisites | Date/Time | Time | Registration |
|-----------------------|-----------------------|-----------|---------|---------------------------|
| Basic Shell | None | 11/20/24 | 1 – 4pm | Register! |
| Tips and Tricks on O2 | Shell | 12/11/24* | 1 – 4pm | Register! |

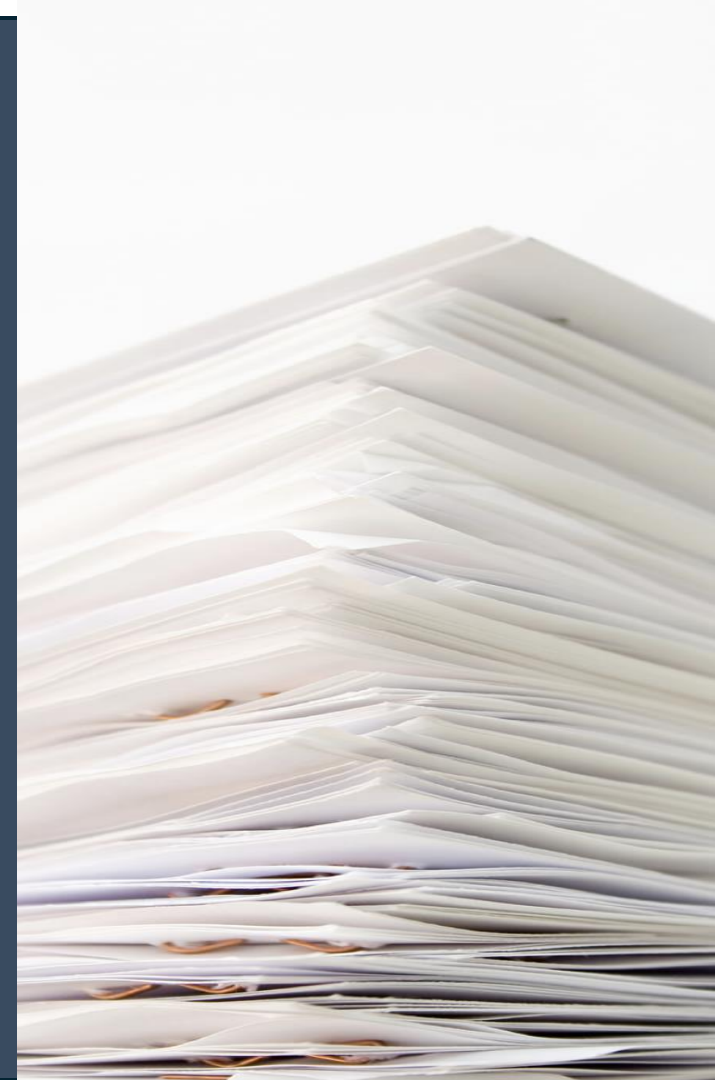
Keep building!



| Topic | Category | Date | Duration | Prerequisites |
|---|----------|--------------------|---------------------|--|
| Peak analysis | Advanced | December 3, 6, 10 | Three 2.5h sessions | R |
| Tentative; 2025 Workshops: | | | | |
| Shell for Bioinformatics | Basic | January 21, 24, 28 | Three 2.5h session | None |
| Introduction to bulk RNA-seq data analysis Part I | Advanced | February 4, 7, 11 | Three 2.5h session | Shell for Bioinformatics |

Talk to us early!

Involvement in study design to optimize experiments



More Information

- ❖ *HBC training materials: <https://hbctraining.github.io/main>*
- ❖ *HBC website: <http://bioinformatics.sph.harvard.edu>*

Contact Us

Sign up for our mailing list:

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

- ❖ *HBC training team:* hbctraining@hsph.harvard.edu
- ❖ *HBC consulting:* bioinformatics@hsph.harvard.edu