Introduction to Single-cell RNA-seq analysis

https://tinyurl.com/hbc-scrnaseq-oct2024
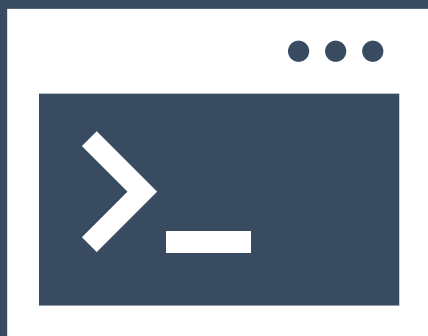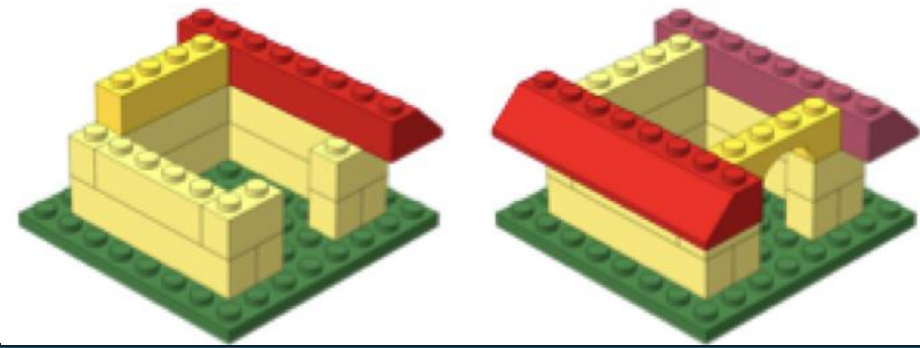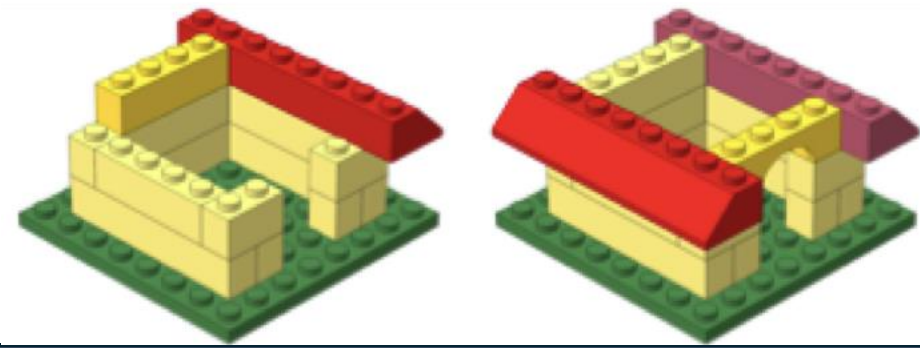
Harvard Chan Bioinformatics Core

Workshop Scope

❖ 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, integration, clustering, and marker identification

❖ Understand practical considerations for performing scRNA-seq, rather than in-depth exploration of algorithm theory

Exit 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/

Research Data Management (RDM)

BIOMEDICAL RESEARCH DATA LIFECYCLE
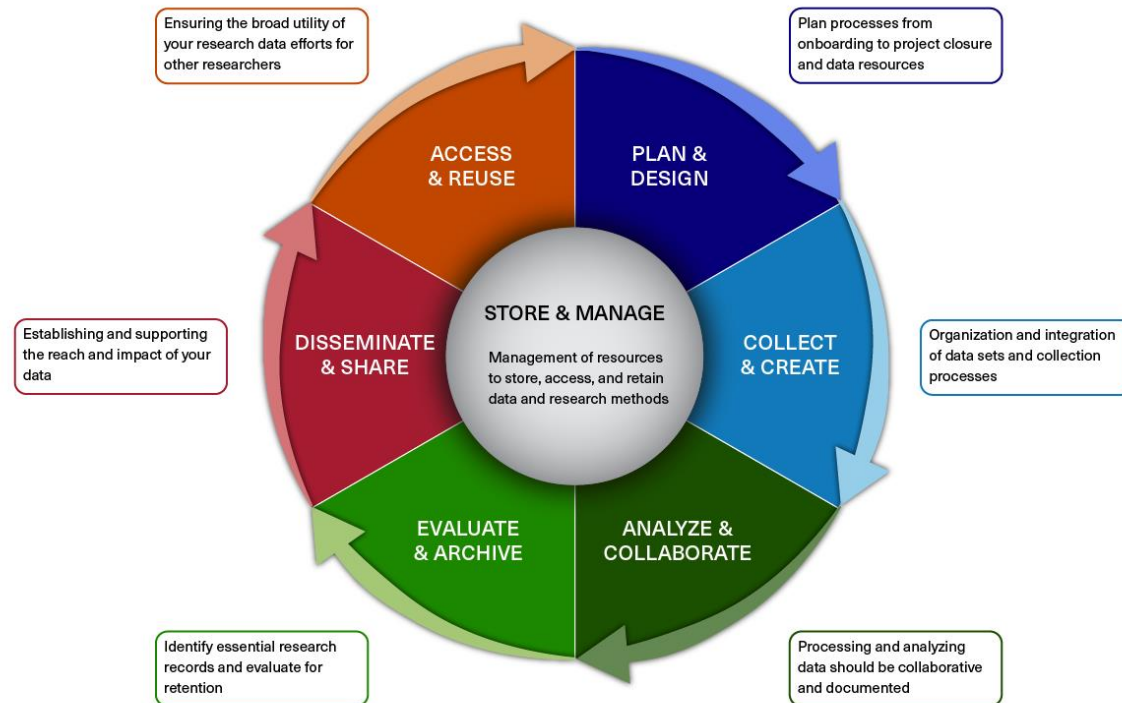
Better RDM practice benefits you

- ❖ **HMS Data Management LMA**

  - ❖ **Webpage:** https://datamanagement.hms.harvard.edu

  - ❖ <u>Sign up</u> for quarterly email updates

- ❖ **Harvard-wide Research data Management**

  - ❖ https://researchdatamanagement.harvard.edu/

NOVEMBER 2024

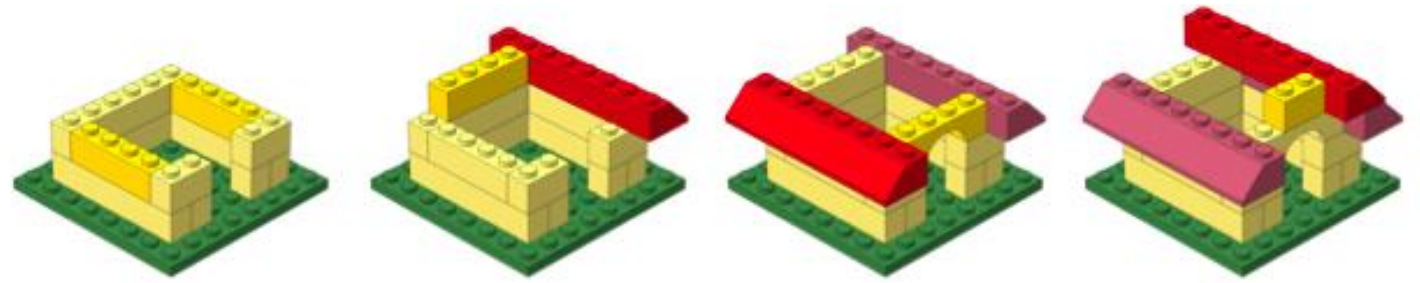| Date	Time	Event	Location
Nov 1	10:30am	**HKS Data + Donuts: Teddy Svoronos on the Science & Implications of Generative AI**	Hybrid
Nov 6	12pm	**Data Discussions: Let's Name Your Data**	Zoom
Nov 7	10am	**LMA Research Data Management Working Group Monthly Meeting**	Zoom
Nov 8	10:30am	**HKS Data + Donuts: Kate Robb on Leveraging Data to Improve Neighborhoods**	Hybrid
Nov 11	2pm	**protocols.io Webinar: Introduction**	Zoom
Nov 12	11am	**Intro to NVivo (for Windows and Mac)**	Lamont Library, Room 310
Nov 12	3pm	**Managing and Storing Qualitative Data**	Zoom
Nov 14	10am	**Data Literacy: Principles of Finding and Citing Data**	Zoom
Nov 14	10am	**HMS RC: Intro to Python**	Zoom
Nov 15	10:30am	**HKS Data + Donuts: Emerging Tech Fellows on Language Access in Boston**	Hybrid
Nov 19	1pm	**Better Research II: Writing a Data Management and Sharing Plan**	Countway Library Classroom 102 & 103

https://datamanagement.hms.harvard.edu/about/news-events/rdmwg-calendar
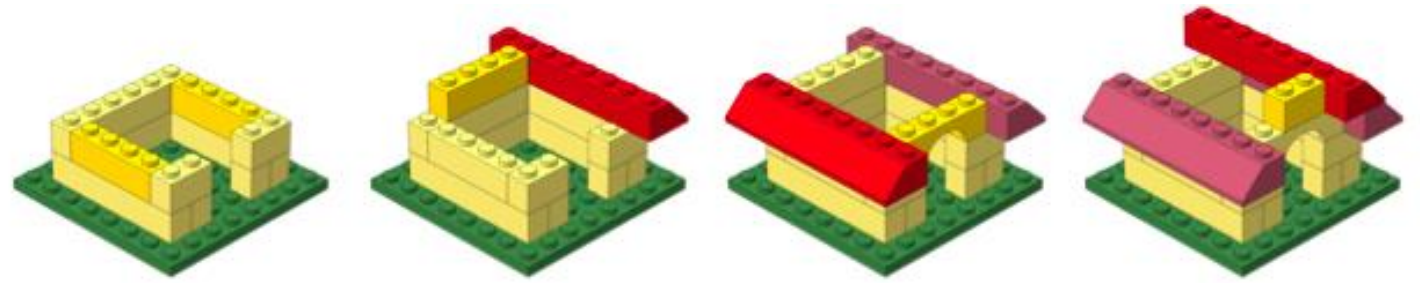
Keep building!

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!

https://bioinformatics.sph.harvard.edu/current-bioinformatics-topics-workshops

Keep building!

Topic	Category	Date	Duration	Prerequisites
Pseudobulk	Advanced	November 12, 15, 19	Three 2.5h sessions	R
Peak analysis	Advanced	December 3, 6, 10	Three 2.5h sessions	R

Talk to us early!

Involvement in study design to optimize experiments

Thanks!

- ❖ **Dr. Arpita Kulkarni** – Associate Director, HMS Single Cell Core

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

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