Bioconductor
OPEN SOURCE SOFTWARE FOR BIOINFORMATICS

```
dds <- DESeqDataSetFromMatrix(countData = cts,
                              colData = coldata,
                              design= ~ batch + condition)
dds <- DESeq(dds)
resultsNames(dds) # lists the coefficients
res <- results(dds, name="condition_trt_vs_untrt")
# or to shrink log fold changes association with condition:
res <- lfcShrink(dds, coef="condition_trt_vs_untrt", type="apeglm")
```
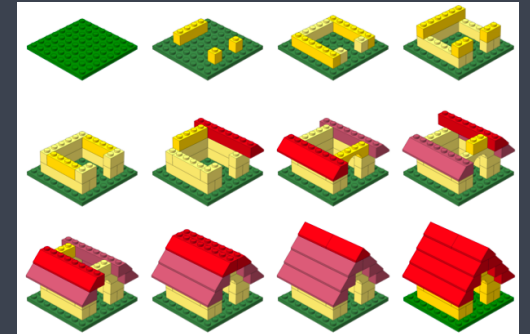
Bulk RNA-seq Analysis Part II

Differential Gene Expression

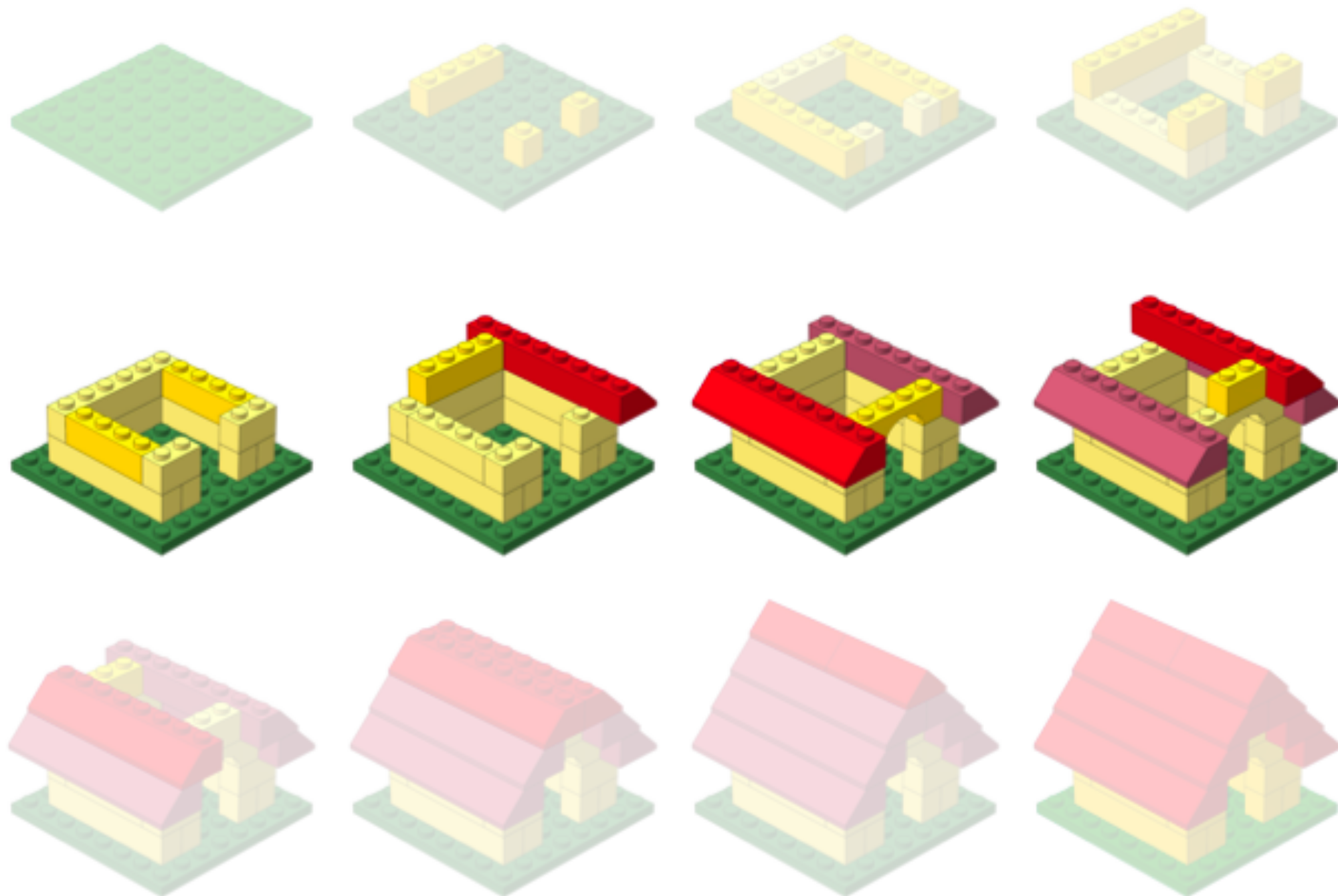Harvard Chan Bioinformatics Core

https://tinyurl.com/hbc-dge-online

Workshop Scope

Differential Gene Expression analysis

✓ Understand the considerations for performing statistical analysis on RNA-seq data

✓ Start with gene counts (after alignment and counting)

✓ Perform QC on count data

✓ Use DESeq2 to perform differential expression analysis on the count data and obtain a list of significantly different genes

✓ Visualize results of the analysis

✓ Perform functional analysis on the lists of differentially expressed genes

Bioinformatics data analysis

Exit survey

https://tinyurl.com/DGE-exit-survey

Interested in additional training?

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

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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/

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/

Current Topics in Bioinformatics workshops 2023 Schedule (1pm - 4pm):

Topic and Link(s) to lessons	Prerequisites	Date	Registration
Basics of Python	None	6/21/2023	Sign up!
R Basics	None	7/19/2023	Sign up!
R Intermediate	Beginner R or Online R course - Harvard Catalyst	8/16/2023	Sign up!
Publication Perfect: Part I	Beginner R or Completion of the Intro to R online resource	9/20/2023	Coming soon
Publication Perfect: Part II	Publication Perfect: Part I	10/18/2023	Coming soon
Rmarkdown	Beginner R or Online R course - Harvard Catalyst	11/15/2023	Coming soon

Data Management Short Workshops

Date	Time	Event	Location
May 31	12pm	**Closing Out Your Research: Data Transfer**	Zoom (libcal.countway.harvard.edu…)
Jun 7	10am	**Intro to Git/GitHub**	TMEC 328

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

Get (stay) in touch with us!

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