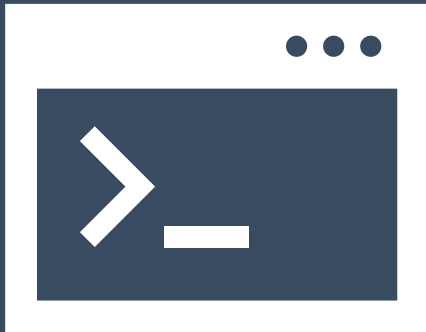


Introduction to R

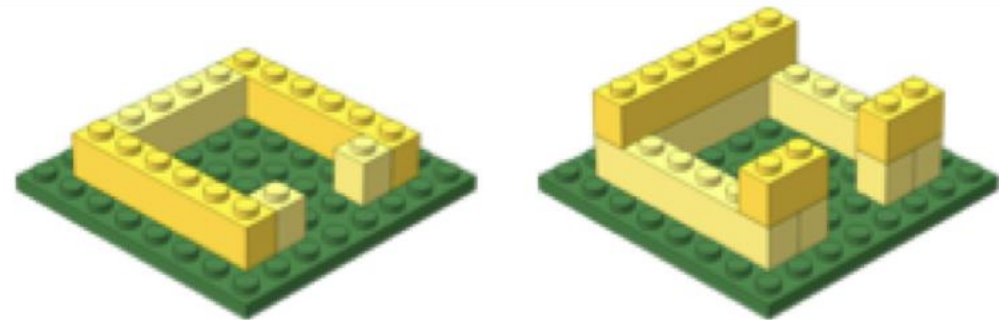
<https://tinyurl.com/hbc-r-online>



Harvard Chan Bioinformatics Core



Learning Objectives

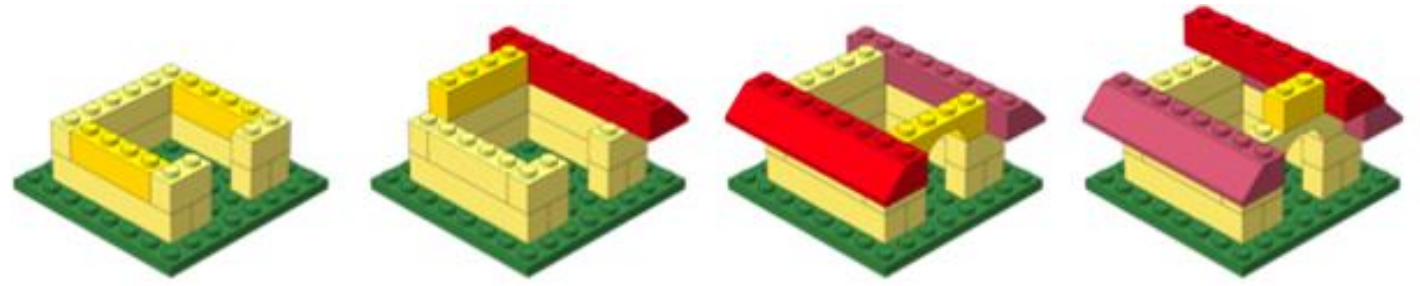


- ❖ Comfortably use RStudio (a graphical interface for R)
- ❖ Fluently interact with R using RStudio
- ❖ Become familiar with R syntax
- ❖ Understand data structures in R
- ❖ Inspect and manipulate data structures
- ❖ Install packages and use functions in R
- ❖ Visualize data using ggplot2
- ❖ Utilize pipes, tibbles and functions from the Tidyverse package suite

Exit survey

<https://tinyurl.com/r-workshop-hbc>


Keep building!



Topic	Pre-requisites	Date/Time	Time	Registration
Publication Perfect II	R basics	8/21/24	1 – 4pm	Coming soon!
RShiny	R basics	9/18/24	1 – 4pm	Coming soon!


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

Harvard Catalyst Online Resource

 HARVARD UNIVERSITY

HARVARD.EDU

Harvard Catalyst Introduction to R:
An online, hands-on training resource for learning the basics of R
[Contact](#)

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HOME Lessons Faculty Supplemental Resources


Welcome to Introduction to R

This **online, hands-on learning resource** will introduce you to using R and RStudio. R is a simple programming environment that enables the effective handling of data, while providing excellent graphical support. RStudio is a tool that provides a user-friendly environment for working with R. This resource is intended to provide both basic R programming knowledge and information on utilizing R to increase efficiency in data analysis.

This comprehensive online learning resource was created in collaboration between [Harvard Catalyst](#) and the [Harvard Chan Bioinformatics Core](#). It includes a series of videos explaining fundamental concepts in R and demonstrates the application through live coding. It is geared toward those interested in learning the basics of R for reproducible data wrangling and visualizations (ggplot2), and/or performing data analyses that require a basic knowledge of R.

Resource lessons address the following:

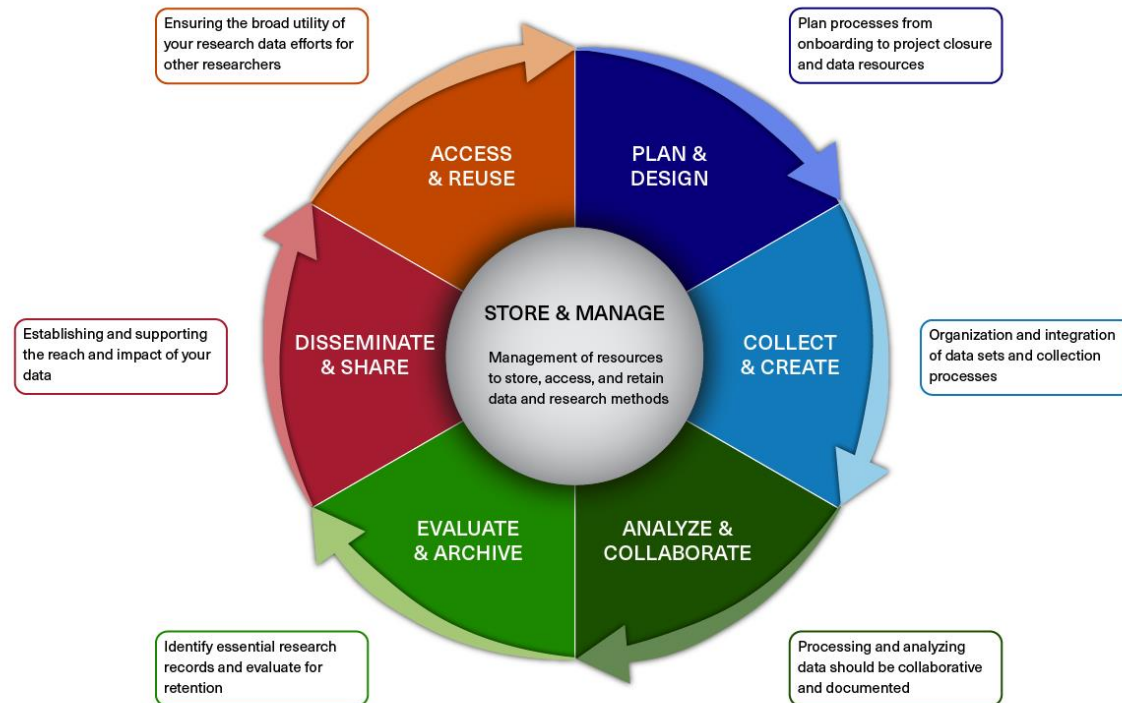
- **R syntax:** Understanding the different 'parts of speech' in R, and introducing variables and functions, demonstrating how functions work, and modifying arguments for specific use cases.
- **Data structures in R:** Explaining the classes of data structures and the types of data used by R.
- **Data inspection and wrangling:** Reading in data from files, and using indices and various functions to subset and create datasets (including the tidyverse suite of packages).
- **Visualizing data:** Visualizing data using plotting functions from the external package ggplot2.
- **Exporting data and graphics:** Generating new data tables and plots for use outside of the R



<https://projects.iq.harvard.edu/hcatrrsource>

Research Data Management (RDM)

BIOMEDICAL RESEARCH DATA LIFECYCLE



Better RDM practice benefits you

- ❖ **HMS Data Management LMA**

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

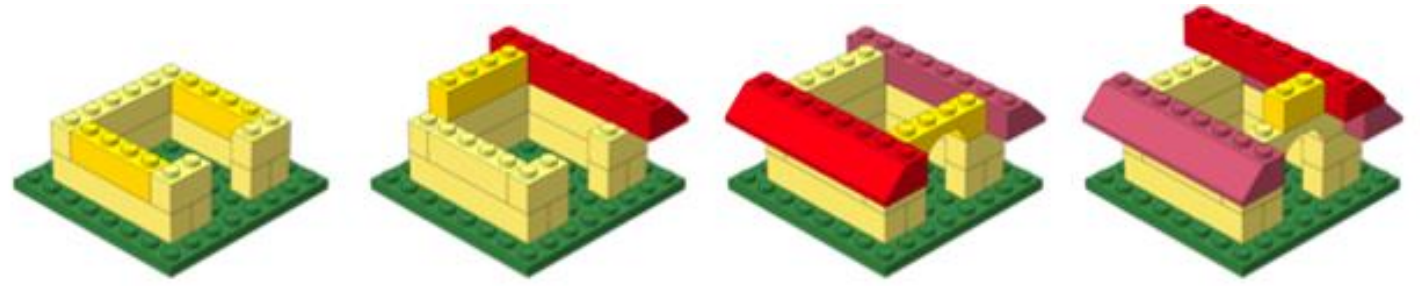
- ❖ **Sign up** for quarterly email updates

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

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

Date	Time	Event	Location
Aug 7	1pm	Demystifying Commercial LLMs for Medical Researchers	Zoom
Aug 8	10am	Intro to O2	Zoom
Aug 12	2pm	protocols.io webinar: Introduction	Zoom
Aug 20	1pm	Hello? It's Me, Your Data! Recommendations and Resources for Managing Research Data	Zoom

Keep building!



Topic	Category	Date	Duration	Prerequisites
Tools for Reproducible Research	Advanced	Aug 6, 9, 13	Three 2.5h sessions	R
Introduction to Differential Gene Expression (DGE) Analysis	Advanced	Aug 20, 23, 27, 30	Four 2h sessions	R
Shell on High Performace Computing (HPC) for Bioinformatics	Basic	September 3, 6, 10	Three 2.5h sessions	None
Variant Calling	Advanced	September 17, 20, 24	Three 2.5h sessions	Shell and HPC
Introduction to R	Basic	October 8, 11, 15, 18	Four 2h sessions	None
Peak analysis	Advanced	October 25, 29, November 1	Three 2.5h sessions	R
Advanced topics in SingleCell RNA-seq	Advanced	November 12, 15, 19	Three 2.5h sessions	R

<https://bioinformatics.sph.harvard.edu/upcoming-workshops>

Join us for HBC Community Breakfast!

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



**Thursday September 5th, 2024
9:00 to 10:30am**

More Info:

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

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