

# Introduction to R: Basics, Plots, and RNA-seq Differential Expression Analysis

## REQUEST FOR APPLICATIONS

### Course description:

This three-day hands-on workshop will introduce participants to the basics of R and RStudio and their application to differential gene expression analysis on RNA-seq count data.

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. Together, R and RStudio allow participants to manipulate data, plot, and use DESeq2 to obtain lists of differentially expressed genes from RNA-Seq count data.

### Target audience:

This workshop is intended to provide both basic R programming knowledge AND its application. Participants should be interested in:

- using R for increasing their efficiency for data analysis
- visualizing data using R (ggplot2)
- using R to perform statistical analysis on RNA-seq count data to obtain differentially expressed gene lists

### Date applications are due for applicants and endorsers:

Applications are due at 5:00pm on September 6, 2017.

Endorsements are due at 5:00pm on September 11, 2017

### Date by which applicants will be notified:

All applicants will be notified of their status via email no later than September 29, 2017.

### Selection process and criteria:

Harvard Catalyst's Education Program offers first priority to applicants who are current Harvard students, faculty, or current employees of Harvard University, its ten schools, and its seventeen Academic Healthcare Centers (AHC), or that of Boston College School of Nursing, MIT, or Harvard Pilgrim Health Care. A complete list of participating institutions can be found on the Harvard Catalyst website: <http://catalyst.harvard.edu/about/>.

The next level of priority is awarded to members of the national Clinical Translational Science Award (CTSA) consortium. A complete list of participating institutions (CTSCs) can be found on the CTSA website: <https://www.ctsacentral.org/institutions>

Applicants who are external to the groups listed above are accepted for a fee when space is available.

**Tuition/fee for external participants:**

The expectation is that by accepting a seat in one of the Education Program courses, the participant is agreeing to attend the entirety of the course. As part of the application process, a supervisor's endorsement for course attendance, granting the applicant permission to be away from the lab or clinical duties for the duration of the course, will be automatically generated. If a participant must be absent for any portion of the course, it is the participant's responsibility to notify course coordinators, since attendance is taken at all sessions. If the participant cannot be reached, the coordinators will then be obliged to notify the endorsing supervisor of the unexplained absence. Since the Education Program courses are expensive to produce, but are offered to Harvard and CTSC affiliates free-of-charge, including meals and Continuing Medical Education (CME) credits, the only obligation of participants is to attend and participate fully.

Please also note that participants seeking CME credits must attend all course sessions and complete each daily evaluation. No partial CME credits are offered.

**If you have any questions about the course or information above, please don't hesitate to ask. The course coordinators can be reached at [PGE\\_Bioinformatics@catalyst.harvard.edu](mailto:PGE_Bioinformatics@catalyst.harvard.edu).**