Module 2: Overview

Module Overview

In this module, we will be learning all about RNA sequencing, the method used to generate the gene expression data we will be analyzing in this research project. You will be finishing up the R programming tutorial in preparation for working with the actual CCLE data in the next module.

Module Learning Objectives

2.1 Biology/Stats (1.5 hours)

1. Review mechanisms of gene expression and next-generation sequencing technologies, specifically RNAseq
2. Understand steps for gene quantification using RNAseq
3. Understand the distinctions between reported sex, sex chromosome complement, and sex chromosome independent sex effects

2.2 Coding (2-3 hours)

1. Understand how to read and write data files in R
2. Understand factors and levels in R
3. Understand control structures in R

4. Understand how to use ggplot2 for data visualization in R
5. Understand how to save figures and data as files in R
6. Understand how to print reports in R

2.3 Research/Professional development (30 min)

Find help pages on functions in R packages to understand possible arguments and default values