

GENE 540: Gene Expression Analysis

The gene expression programs that instantiate eukaryotic cell states are complex and dynamic, but ultimately essential to understanding development, homeostasis, real-time environmental adaptation and cellular dysregulation. This course will aim to equip you with a broad range of tools for analyzing gene expression and elucidating the regulatory influences affecting it. By the end, students will have an appreciation for the many layers of expression regulation and a familiarity with common methods for analyzing gene expression and its regulation that will enable interpretation of such results in the literature and the ability to choose the right tool for answering their own gene expression-related research questions in the future.

Learning Objectives

- Develop an understanding of the many layers of regulation influencing gene expression
- Become familiar with common gene expression measurement methods and know how to choose the right one for the job
- Be able to perform differential gene expression analyses, and identify and use gene expression signatures
- Know how to find genomic regulatory elements that may influence a gene's expression
- Appreciate gene expression in the context of functional pathways and dynamic gene regulatory networks/ programs

Credits: 2

Class Type: Graduate Course

Program: Biology, Genetics, and Medicine

Availability Fall 2021

Session Session A