**CSB 458H1F – EPIGENETICS**

36S

**Lecturer:**

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**Prerequisites:** BIO 260H1/HMB 265H1, BCH 311H1/CSB 349H1/MGY 311Y1

Research in epigenetics examines a broad range of phenomena related to non-Mendelian inheritance. Examples of epigenetic regulation include X-chromosome inactivation, genomic imprinting, paramutation and position-effect variegation. The term epigenetics has also been used to describe a range of molecular mechanisms involved in these phenomena, such as chromatin and histone modifications, DNA methylation and non-coding RNA-mediated regulation.

In this course, students will read, analyze, present and discuss papers that explore epigenetic phenomena in a range of eukaryotes, from single-celled organisms to plants and humans. We will also discuss the potential roles of epigenetic regulation in development, trans-generational inheritance, genome evolution, and human disease.

**Course Objectives:**

Explore concepts in the field of Epigenetics using primary scientific literature

Understand how a variety of experimental techniques are used to test a hypothesis

Develop scientific literacy by interpreting and evaluating papers

Build communication skills through presentations and discussions

**Evaluation:**

The majority of class time will be devoted to student presentations and class discussion of papers. Evaluation will be based on a combination of:

Paper presentations

Participation in class discussions

Weekly paper annotations

Term tests

**Required Text:** None

**Office hours:** TBA