

The Jackson Laboratory
Cancer Genomics Undergraduate Short Course

July 10-21, 2023

Course Description

This two-week short course will cover all things cancer genomics for the undergraduate audience. While the detailed schedule for Summer 2023 is under development, the course will cover topics ranging from cancer biology to variant curation. Students will learn to navigate and use publicly available online databases, will work in groups to determine the best path of treatment for a fictional patient, and will discuss ethical topics related to human subjects' research, clinical practice, and cancer disparities. There will be a mixture of live (synchronous online meetings) and asynchronous activities to complete throughout the course.

Course Topics

- Genomic Research
- Cancer Biology
- Cancer Genomics
- Bioinformatics
- Variant Curation
- Human Subjects Research
- Personalized Medicine
- Cancer Disparities

Live Sessions

Students will assemble online during synchronous live sessions totaling about 8-10 hours over the two-week course. These sessions will include instruction on didactic content, interpretations of cancer genomics data, ethics discussions, and presentations featuring cancer researchers from the Jackson Laboratory.

Asynchronous Activities/Inquiry Project

The asynchronous activities for this course will center around an inquiry project focused on a fictitious cancer patient. Students will learn to navigate cancer genomic databases such as the cBioPortal and OncoKB to pinpoint information on the clinical significance of gene variants identified through genomic tumor testing. Ultimately, students will design a personalized treatment plan for their patient and present their results to a genomic tumor board of their peers.