This year, over one and a half million cases of cancer will be diagnosed in the United States alone. Researchers worldwide are working relentlessly, using cutting edge laboratory techniques, to find ways to prevent and treat this disease. New and exciting breakthroughs are happening everyday. In this camp, students will look at some of the same questions researchers look at: Why do cells begin to grow out of control and become cancerous? What are the best treatment approaches? Is it possible to prevent cancer or find a cure?

Students will be introduced to some of the fundamental concepts of normal molecular and cellular biology and explore how disruption of these processes can cause cells to begin to grow out of control and invade healthy tissue. Student's understanding of cancer as a genomic disease will be enhanced by performing multiple laboratory techniques that are currently being used in modern research labs including gel electrophoresis, DNA restriction digests, ELISA (enzyme linked immunosorbant assay) and microarrays. In addition, students will perform an Ames test to assay the mutagenicity of various compounds, dissect a sheep's brain as part of a unit on brain cancer and use online bioinformatic techniques to explore gene mutations and cancer.

Topics will also encompass current and developing pharmacology and therapeutics and discussion of many of the ethical issues that accompany rapidly evolving biomedical technologies, treatments, and societal trends.