



## Summer Research Program 2024 – Projects

### Project #9

**Title:** Functional Role of Long Noncoding RNAs (lncRNAs) in Breast Cancer Using CRISPR-Cas9 Genome Editing

**Description:** Breast cancer is the second most common cancer type around the world underscoring a need for a better understanding of breast cancer and the development of novel diagnostic and therapeutic strategies. While only 2% of the human genome encodes for protein, almost 93% of the entire genome could actively be transcribed, suggesting a role for various noncoding RNAs in regulating various physiological and pathological processes. In the current study, we aim to use CRISPR-Cas9 genome editing technology to understand the role of lncRNAs in breast cancer and their potential utilization as disease biomarkers and therapeutic targets. This project will involve multiple techniques such as bioinformatics, next-generation sequencing, cell and molecular biology.

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