

**Biotechnology with a focus on Biomedical Research:** *“From computers to animals: an excursion to a biomedical lab”*. Modern biomedical research employs tools from multiple disciplines to understand diseases and develop cures. We invite you, the brightest young North Carolinians, to join us for a challenging research journey this summer. You will work in teams to tackle research problems to understand the mechanism of hereditary cataract and develop gene therapy treatment. You will learn and use cutting-edge biotechnology including bioinformatic tools, recombinant DNA techniques, lipid nanoparticle/mRNA-based gene therapy, genome editing using CRISPR-Cas9, and zebrafish as a model organism for animal study. The short 4 weeks will be an epitome of a real-world biomedical research spanning *in silico*, *in vitro*, and *in vivo* studies. Your projects will be highly exploratory. Together, we will boldly go where no man has gone before.

Instructors: Dr. Ying Wang; Ms. Jessica Croson