

Md. Iftehimul is a Ph.D. student in Applied Science and Technology, with a concentration in Bioscience, at North Carolina A&T State University. His research sits at the intersection of cancer immunotherapy, immuno-omics, and tumor evolution. He focuses on glioblastoma and breast cancer, two cancers marked by high heterogeneity, therapy resistance, and immunosuppressive tumor microenvironments.



His current work centers on triple-negative breast cancer (TNBC) and the role of extrachromosomal DNA (ecDNA) in tumor evolution and drug resistance. Using models such as the 4T1 murine breast cancer line, he studies how cancer cells adapt under therapeutic pressure and how genomic structural changes contribute to treatment resistance.

In parallel, he applies immuno-omics approaches to characterize tumor immune interactions and identify targets for immunotherapy. This work includes profiling immune-related gene expression in tumors and using immunoinformatics to predict tumor antigens and design multi-epitope cancer vaccines, including oncolytic-virus-delivered vaccine strategies for TNBC and glioblastoma. His broader goal is to understand how tumor evolution drives immune escape and to use that knowledge to develop more effective immunotherapies for treatment-resistant cancers.

Before his doctoral studies, he received his Masters in Biotechnology from Bangladesh Agricultural University. He has research experience in microbial genomics from Ocean Country Partnership Programme (OCP) project, where he led whole-genome analysis of microbial pathogens (e.g., bacteria and virus) and contributed to genomic publications.