During first year in the MS in Bioinformatics program, performed research in projects and 1 paper, where I made the project interesting for the team and audience and spearheaded setting up team meetings, project proposal, presentation flow & problem resolution.

For Algorithms, was involved in 4 projects. First was partitioning set of numbers so difference between 2 groups is minimized, This is an NP problem and in addition I also coded in JAVA the brute force N choose k combinatoric algorithm for exhaustive search. Second was dynamic programming algorithm for bitonic tours, which additionally I implemented in Python with Graphviz. Third was reduction of the NP-Complete 3-color graph problem. Final project researched 4 implementations of string matching algorithms including Finite Automaton. (3-months)

In Epigenetics gave team presentation influenced by Dr. Andrew Feinberg on the epigenetic origin of cancer. Presentation and research, titled "Cancer and Epigenetics From Stem to Cancer" focused on 3 areas where disregulation in stem/progenitor cells leads to cancer including hematopoietic system, epithelial, and aging. (2.5 months)

Gave presentation on role of epigenetic regulation in V(D)J recombination of B-cell receptors and regulation in metabolism linking to IDH mutations to hypermethylation, differentiation blockade and astrocytomas. (1.5 months)

In Cell Biology (additional non-requirement), gave presentation on a paper on rescue of oxidative stress in Huntington's disease with PPAR agonist bexarotene with additional research. (1 month)

8000+ word paper, titled "Assigned Mutation or Natural Variant: A712T" Used protein bioinformatics techniques including PROSITE, KD hydrophobicity, PSA and MSA on EMBL-EBI server, Predict Protein, PDBsum, and Chimera describing role of a mutation in the transmembrane domain of high voltage calcium transporter alpha subunit Cav2.1. Included confirming research by other authors on this specific helix. (3 months)