The aim of this project is to understand the mechanism of horizontal gene transfer and, more specifically, how resistance arises via mutations in *Mycobacterium tuberculosis* (TB). In particular, its resistance to the drug Pyrazinamide (PZA) will be examined. I will conduct two phases of this research. The first will be to observe horizontal gene transfer in everyday bacteria. The second phase will be to insert the mutant pncA gene that confers PZA resistance to a competent, non-virulent bacteria, *E. coli*, and study the rate of transfer in PZA-resistant TB. By doing this, it will be possible to better understand the mechanisms by which PZA-resistant bacteria transfer resistance and learn more about the mutations of this disease.