Understanding and observing HIV has been an ongoing goal for decades. The hindrance to curing HIV likely stems from the behavior of latent reservoirs in the body. The latent cells which make up these reservoirs are able to carry infection and can become actively infected. At some point, the viral load in the body may fall below the detection level, followed by potential random blips of detectable viral load. Since the virus is able to remain present in latent reservoirs during treatment, it is much more difficult to track and makes viral blips difficult to predict. In light of this information, we plan to carefully model and examine the dynamics of the cell interactions of the virus, especially the latent cells and virions. We plan on using stochastic and probability models to capture the dynamics of HIV given the unexpected behavior of these cell types. This type of modeling will give us an accurate depiction of the behavior of this randomness. In doing this, we propose to provide a practical method to interpret experimental data in the context of the HIV model, focusing on the random behavior of the infection. This research took place at the University of Michigan-Dearborn REU. (Received September 16, 2019)