In continuing this research I want to be able to successfully simulate the molecular dynamic of colloidal crystallization and work with simulations that show these interactions to contribute towards experiments in colloidal crystallization. In specific, I will be optimizing my code until it is able to run the specifications required to further this project. Following that, I will use the simulation to find out how to anneal colloidal crystals on a larger scale while decreasing the concentration of defects usually found in crystallization and hopefully creating simulations that explore strategies that work towards this goal.

I plan to accomplish code optimization by first finding the tightest bottlenecks in the code and working out methods of accomplishing the same tasks with less runtime. I will try to seek out advice from professionals or others who have encountered this problem before. After the code optimization I will start sweeping different parameters and record the results of each parameter, hoping to find some correlation between the parameters I have and the decrease in the concentration of crystallization defects.

By the end of this semester, I plan to have prepared: the code, well commented and a “Read Me” text file that explains the structure, variability, and usage of the code, if necessary; well-documented compilation of correlations and results of different parameters sweeps.