3D Molecule Game Synopsis

The focus of this project is to bridge the gap between the “hieroglyphic” molecular representations taught in the chemistry classroom and the physical reality of those molecules.

A stumbling block for undergraduate students in introductory chemistry is conceptualizing the material. Our project goal is to develop a fun game that allows students to manipulate molecules in 3D space. The top two priorities of this game are playability and modeling accuracy. Although manipulating molecules in 3D is a requirement, the accuracy of our physical modeling may be compromised to make the game fun for students. The balance between accuracy and playability will be a major challenge throughout the course of this project. Determining a method for quantifying “playability” will also be a challenge.

Within the game, molecules’ interactions and motion will follow basic physical laws. The extent to which the physics are modeled will depend on the limitations of the selected game platform. Ideally the game should support multiple platforms so students are not limited to an operating system. Some of the risks associated with this project are lack of domain knowledge, lack of game design knowledge, and lack of physical modeling knowledge.