**Introduction**

**Model of Cells**

**Description of Cell Shapes**

A cell consists of double-layered lipid membrane that helps protect and separate a cell from the harshness of a biological system. In additional to the membrane's defensive properties, it is a selectively permeable barrier consisting of glycoproteins and glycolipids which allow for communication with other cells and the environment around it.

In addition to the previously mentioned properties, it allows for the transfer of certain nutrients that it requires in order to grow and thrive. In order for it to be an accurate representation of a cell, it must have a shape with the maximum amount of surface area that is permitted due to their size limitations. For the shape chosen to describe a cell, spherical shape would be used to describe one in three-dimensional aspects, where a elliptical to circular shape can be used in the second-dimension. However this description is not used to describe all possible cells, and is used only to provide a general basis to describe cells in the model.

**Interphase Cells**

Generally within the interphase, a cells attempts to duplicate its organelles, mass and DNA content. With numerous ways to describe how a cell can appear, the

**Mitotic Cells**

**Variants of the Basic Model**

**Simulations**

**Characterization of Cell Groupings**

**Model of Cell Population**

**Simulating Biological Processes in the Cell**

**Discussion and Outlook**