HSSP-MIT **Cell and Microbiology: The Fun Basics!**

**H-SCHOOL**

Lecture 1: Sunday 7/8/2013

**Topics**: The Cell Theory, Cellular Organelles, Energy, General Chemistry, Lipids

Welcome to our first lecture of Cell and Micro! This seminar is designed for the pace and capacity of high school students, rising 10th to 13th graders. In this seminar we will talk about the relationships and foundations that are related to Cell Biology. We will discuss the initial theories and concepts of cell biology, including the chemical, physical, and genetic components. Also looking at microscopy, we will be able to distinguish between what is Cell and Microbiology. By the end of this seminar you will be able to understand and relate the cellular compositions and structures that allows for proper functioning of the cell.

**Keywords:**

-Cell -Genes -Bacteria -Water Molecule -Photosynthesis

-Chloroplast -DNA -Virus -Carbohydrates -Covalent Bonds

-Eukaryotes -RNA -Viability -Energy -Polarity

-Prokaryotes -Proteins -Membrane -Mitochondria -Atomic Nucleus and Electrons

-Carbon Compounds -Lipids -ATP -Cytoskeleton -Model Organisms

**Questions:**

1. Vegetables are plants, they are green and tastes great! (yeah right) We discussed in class that plants undergo a process known as Photosynthesis to obtain and store its energy reserves. Photosynthesis is what allows for the plants to have its signature green color due to chlorophyll. Now think of a mushroom, an onion, and a potato, are they still considered vegetables? They are not green!! Why or why not?
2. Do you think a cell membrane WITHOUT phospholipid bilayers is good or bad?
3. Where in your house do you think harbors the most diverse arrangement of Microorganisms?