

## Review 09

### **Movement of smallish substances into and out of cells**

- Hydrophilic pores/channels
- Carriers
  - ★ Facilitated transport (facilitated diffusion)
  - ★ Active transport

### **Movement of largish things across the cell membrane:**

- ★ Endocytosis—movement in via binding to outer membrane surface and pinching off of membrane to inside
- ★ Exocytosis—movement out via fusion of internal membrane-bounded vesicles and their opening to the outside
- ★ Phagocytosis—engulfing of large pieces/small organisms; digested by fusion of “food” vacuoles w/ lysosomes (internal vesicles that contain digestive enzymes)

### **Cells parts at the light microscope level**

- Cell Wall--surrounds plant, algal, fungal, bacterial cells  
structural support; loose lattice through which many things can freely pass
- Cell Membrane--surrounds all living cells
  - ★ barrier between living and non-living
  - ★ controls, to large extent, what enters and leaves the cell
- Cytoplasm—cytosol and cytoskeleton
- Nucleus--repository of hereditary material (DNA)
- Nucleolus--ribosome assembly
- Vacuole
  - ★ storage (water & wastes in plants; food in animals)
  - ★ water balance in animals (contractile vacuole)

## **Enzymes**

1. Almost all are proteins.

2. Speed up chemical reactions.

Interact with substrate at active site, which forms an environment that *lowers energy of activation* and therefore speeds up reaction

3. Not altered by reactions they mediate.



## **Review 09, con't**

- 4. Specific for the types of reactions they mediate.  
e.g. cellulase digests cellulose but not starch whereas amylase digests starch but not cellulose, etc.**
- 5. Activity affected by physical surroundings.**
  - pH**
  - temperature**
  - saltiness of environment**