Ch 6.7

**Cell Wall**: Extracellular structure of plant cells

* Functions
  + Protects Plant
  + Maintains Shape
  + Prevent Excessive uptake of Water
* Specialized to hold plant under force of gravity
* Prokaryotes, Fungi, and some unicellular eukaryotes use it
* Are thicker than Cell Membranes (0.1 µm to several micrometers)
* Composition
  + Microfibrils are embedded in a matrix made of polysaccharides a/ proteins
    - Microfibrils are synthesized by cellulose synthase
      * Microfibrils are made of polysaccharide cellulose

**Primary Cell Wall**: Thin Wall secreted by young plant

**Middle Lamella**: Area between primary walls

* Have a lot of polysaccharides named pectins
* Glue together neighboring cells

**Secondary Wall**: Between Plasma Membrane and Primary Wall

* Wood consists mostly of Secondary Walls
* Developed after plant done growing

**Extracellular Matrix** (**ECM**): Cell Wall but for Animal Cells

* Made from glycoproteins and some carbohydrate containing molecules.
  + Most common glycogen is *Collagen*.
    - Forms strong fibers outside cell
      * Accounts for 40% of total protein in body
    - Are embedded in network woven out of **proteoglycans**.
      * Consisting of small core protein + many carbohydrates
        + Up to 95% carbohydrate
* Some cells attach to ECM by **Fibronectin**
  + Bind to cell surface receptor proteins called Integrins
    - Are built into plasma membrane
  + Cyto side builds into filament
  + Transmit signals across membrane