**BIOL 112 Lab Questions – 3 – Plant Cells**

**NOTE** – don’t worry yet about differences between monocots and eudicots, and don’t worry yet about tissue or organ structure. We’ll come to those things. Focus on the cells.

1. Examine a cross section of plump celery tissue for parenchyma (toluidine blue stain) and sclerenchyma (phloroglucinol stain) cells. Observe and describe in your lab notes. Do you see other types of cells with either preparation? Describe these in your lab notes, and briefly describe the function of every kind of cell you see.
2. Observe wilted celery stalk. Can you make and stain a section? If so, what is the observed difference between plump and wilted tissues? If you can’t make a section, propose some ideas to explain the difference between the plump and the wilted stalks. We’ll think about this more when we talk about water transport.
3. Examine white potato tissue. Observe and describe in your lab notes. What are the similarities and differences between potato and celery tissue? What kind of cells are these? What is their function?
4. Examine carrot tissue. Observe and describe in your lab notes. What are the similarities and differences between white potato and carrot tissue? What kinds of cells are these? What is their function?
5. Make and stain sections of leaves. Try to get a cross section that includes the veins. Describe what kinds of cells you see, including sketches and functions, in your lab notes.
6. Examine a cross section of the leaf stalk of the greens (use celery, it’s a petiole, or the stalk of the kale, or whatever you may have brought in), stained with toluidine blue. Try to find some collenchyma and sketch them in your lab notes. What is their function?
7. Extract a celery “string” and stain with phloroglucinol. What do you see? What are the implications?
8. Write a brief overview of this activity, and evaluate whether it was helpful to you in learning the different cell types found in plants.