**BIOL 112 Lab Questions – 7 – Water Transport in Plants**

1. Prepare and examine a stained slice of celery, or if you can make a good section, a plant with more chloroplasts. Introduce salt water solution under the coverslip. Examine the stalks of celery that have been in salt water vs. fresh water. Explain your observations including structure-function relationships and the evolutionary context.
2. Examine the variegated potted plant. The soil is dry. We’ll water with a dye solution. What do you expect to happen? Why? What did happen?
3. We’ll also cut some of the stems of the variegated plant and put them in dye solution. What do you expect to happen? Why? What did happen?
4. As a team, develop some experiments using white carnations and dye solution to measure rate of transpiration under varying conditions of light, temperature and air flow. As a class, decide on hypotheses – why did we decide on the chosen hypotheses? Execute the experiment; interpret and discuss results. Why was it important to re-cut the flower stems under water?
5. As a team, develop some hypotheses on the abundance and location of stomata in various types of plants. Use nail polish to take impressions of stomata to test your hypotheses. Interpret and discuss your results.
6. Write a brief overview of these activities, and evaluate whether they were helpful to you in learning the concepts of water potential and water transport in plants.