

## Plant Biology

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People major in plant biology; that is, they spend four years studying plants. At LFC, there is one course on the subject. Having been both a participant and a peer mentor in the course, I want to share with you a little bit about my experience. Plant biology encompasses all that is well and good about a liberal arts education. A liberal artist studying biology does not care to spend four years getting deep into plant science; one semester is sufficient. The liberal artist will glean over what they want to and then move on to another interesting subject.

To many, acquiring a scientific education in the liberal arts tradition sounds a bit like an oxymoron. Science is the epitome of specialization; there is no room for a broadly - gauged inquiry into the realms of science. Science is a deep, dark, mind-shaft and the only hope of deriving any value from studying it is to go deeper and deeper. To the uninitiated, scientists seem a bit strange. They spend hours, days, years, pursuing the most arcane of questions. What will happen if GABA-ABBA is spinning in the negative Z direction? Will it create beautiful harmonic resonances? How will climate change affect the migration pattern of yellow-horned toads; will they continue to produce hallucinogenic compounds? These are things not many practical people care to spend much time thinking about. Nay, far more prevalent are the questions, what will Tracy wear at the Governor's ball? And, how what should I buy with my iTunes gift card? But, lest this turn into a rant about societal values, I shall return to my explanation of BIO 363, plant biology.

Plant biology is an exploratory class. Dr. Westley will lay down the framework while you fill in the rest. Not interested in the inner workings of chloroplasts? Then, you can spend more time thinking about how plants have evolved to deter herbivores. Wait, what? Plants are subject to predation? You bet they are! Plants are basically in a constant battle against anything that wants to steal their infinitely useful carbonaceous compounds. Whoa, I never thought of that... I thought plants were just there. This is the kind of perception-change that happens when one takes a step back from a highly, technical pursuit of scientific knowledge. This is the kind of thinking plant biology fosters. Of course, it helps if one has already cultivated a healthy admiration (or obsession, see figure 1) with plants.

OK, so that's what the lecture is like. Isn't there a lab component? I don't like labs. They feel like lifeless cooking classes: "here is your recipe, follow it exactly, and record everything in this notebook." Yikes! That's a pretty soul-sucking way to engage with ideas. Well, this lab isn't like that. It's exploratory. You get a packet with plant parts and you slice up plants and look at them. A lot of people have trouble with this... Wait... You mean we are just supposed to be in lab, and look at stuff, and engage with the material in the textbook? That's weird. Where is the recipe? Where is my well-defined grading rubric... I really want to get an A, learning is secondary to me. If you think this way, then you are not the right person for this class. If you like learning complicated plant life cycles at your own pace, bouncing ideas off your lab mates, then this lab is for you.

Maybe this lab seems a little suspect to you. You want more rigor, you want more... I don't know, science. That's ok, because for the last third of the semester you will be heading to a world-class research center to study plants with real scientists. I am talking about the Plant Science Research Center at the Chicago Botanic Gardens, a highly recognized institution run in conjunction with Northwestern University. Here, you will be assigned a mentor with whom you will work on a project. You will get an idea of what a future in plant biology really looks like, feels like, and maybe even smells like (if you are lucky enough to work on jackfruit). And this, ladies and gentlemen, is what a liberal arts education is all about. Connecting concepts from a range of disciplines to tackle real, important questions. Granted, a lot of people come away from the internship with a bit of a lessromantic notion of what being a scientist looks like. Yes, there's a lot of repetition involved, but hey, replication is the cornerstone of our scientific tradition, so embrace it! When you make your poster at the end of the internship, you'll start to see how your little

project connects with the bigger concepts discussed in class. Soil particle size tells you a lot about how easy it is for a plant to assimilate nutrients. Plant to plant competition may be beneficial to both competing species because a diversity of pollinators is attracted to the plants. Land managers should pollinate plants from different populations to increase genetic diversity. These are all findings that you could participate in discovering. They might not mean much to you now, but I assure you, they will after you take this class.



Figure 1: The author transporting plants.

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