My experience in education during my undergraduate years at Cornell has mostly been informal and outreach based. I originally started exploring the education minor because I was interested in teaching upper level science in the classroom. However, I realized this was not the education path for me. I now know that I am interested in environmental outreach in an informal setting. Teaching children and adults about the environment may not necessarily be a career path for me, but it will always be something that I will actively practice. I have participated in a number of outreach events and informal settings throughout the past four years where I have learned a great deal about education. Here are a few of my insights that I have picked up along the way.

It is quite obvious that an educator must truly have a passion for what they do in order to effectively influence their audience. This passion and enthusiasm is something that students can recognize and feed off of. I have experienced this on both sides, as a student and as an educator. Learning from a teacher who clearly enjoys what they study can make all the difference in motivating students and encouraging them to learn, even if it’s not a topic they are particularly interested in. Furthermore, being an educator with a true interest in what you’re teaching makes it all the more satisfying to watch your hard work pay off what you see a student reach an “ah ha!” moment. Again, this may seem intuitive, but it is one of the most important concepts in education. Being a passionate teacher makes it easier to be attune to your audience, build relationships with your students whenever possible. It holds them accountable and gives them a reason to be actively engaged. Knowing someone is rooting for them can make all the difference.

I was able to experience how having a passion for what you teach can affect your students through my experiences in The Naturalist Outreach Practicum class. Taught by professor Linda Rayor, this class was easily one of the best education classes I have taken at Cornell and I would highly recommend it to anyone interested in science education. Each student in Dr. Rayor’s class designed a hand-on, interactive presentation about a topic related to the natural world. Each of us chose a topic that we are especially passionate about and interested in. When teaching to classrooms throughout the Ithaca area, it was amazing to see how the students
feed off of your enthusiasm. They looked up to us as real scientists and were quick to copy our attitudes about the wonders of science. While some students may have been wary of insects of spiders before, they take an interest once they learn just how fascinating science can be.

Another insight that I have is about deciphering the different pedagogies related to outreach, interpretation and inquiry-based learning. Every teacher is different and must develop their own strategies in order to be effective, from classroom management and lesson plans to how they interact with their students. Outreach is a very broad term, which in the most basic sense, encompasses public education about science in an informal way. Interpretation is a communication process that forges emotional and intellectual connections between the interests of the audience and the inherent meanings in the resource. It should be enjoyable, relevant, organized, and thematic. Inquiry activates and builds upon existing knowledge by linking facts with concepts. What all of these definitions really mean is that students need to be able to discover for themselves with a little prompting and encouragement from their educator. I have led many interactive nature walks and talks in my time as an environmental educator, and this activity is a great example of combining these teaching strategies. On this kind of outing teachable moments occur all the time. The original purpose of the hike may be to identify the local trees. However, if a student asks about an insect or amphibian they see that is the perfect opportunity to teach them about that particular organism.

I came upon a quote regarding education in my Natural Outreach Practicum class last fall that has stuck with me ever since. I believe that in an outreach setting understanding and applying the message of this quote can have a profound impact on the quality of education students are receiving. “Do not try to satisfy your vanity by teaching a great many things. Awaken people’s curiosity. It is enough to open minds; do not overload them. Put there just a spark. If there is some good inflammable stuff, it will catch fire.” -Anatole France, The Earth Speaks. As an interpreter this is an especially powerful quote. You are connecting people to experiences where they are free to make their own conclusions, build upon past experiences and truly discover for themselves. Unlike a public school teacher, you are not necessarily bound to “teaching to the test”. There is more freedom to let students explore, make connections and learn at their own pace. When there is not a set outcome, it is amazing to observe what a student can discover on his or her own.
I have spent the past two summers as an environmental educator for the DEC summer camp system in the Adirondacks. For a week high school age students spend time learning about the environment while being immersed in an outdoor setting. Anatole France’s wisdom was not something that I followed at first when designing my lesson plans for forest ecology. However, as the summer progressed I observed just how important this advice was. I could tell the students as much as I wanted about the ecology of the forest and how to identify the tree species but until they were allowed to investigate and take a hands-on approach my lessons weren’t really getting through.

Richard Louv, in his novel *Last Child in the Woods*, highlights the importance of youth spending time outside. He coined the term “nature deficit disorder” to address the disturbing fact that many youth nowadays are spending too much time inside on electronic and not enough time outdoors engaging with nature. The health benefits from exposure to the outdoors are numerous while the negative impacts of the indoors like ADHD and obesity continue to rise. Getting students outside of the traditional classroom and exposing them to the nature is something that is crucial to the development of our future youth. As discussed, there are many different ways that this can be accomplished depending on the specific pedagogy. I am not in any way discrediting the importance of what students learn in the traditional school setting. Rather my insight is that environmental outreach should be supplemental to traditional schooling.

Finally I want to emphasize just how important outreach really is. Scientific information is great, but not if you don’t have an interest and inherent connection and want to conserve. We need to create memories and connections to nature for future generations to WANT to make a difference. It’s like if you grow up recycling, it becomes part of what you always do. Versus if you never learned to recycle or the importance of it, then it’s not really something that is second nature to you as an adult. Environmental stewardship is something that must be taught at a young age in order to be the most effective. Sure adults have more power now, but the young will grow up to be the bright minds of the future. Educators are ultimately partially responsible for filling these young minds. Having a passion for what you teach and finding a way to teach that topic in an effective way is how this can be accomplished.