# In the biology program at Longwood University, students are given the chance to grow by starting with introductory level courses and gradually work their way to upper level, more complex topics. Using this curriculum, I was able to critically analyze and apply the major principles of ecology and evolution through taking Biol 251: Introduction to Ecology and Evolution, Biol 399: Evolution, and Biol 432: Freshwater Ecology.

# In Biology 251, we were tasked with creating a semester long project revolving around the ecology of Lancer Park Pond. My group decided to look into the effects of nutrients on periphyton growth during the autumn season. We hypothesized that with the addition of phosphorous enrichment, periphyton growth would increase. Through this course I learned how to use GFF filtration, a sonicator, and a fluorometer in order to test chlorophyll levels for each of our treatments. Unfortunately, we didn’t see much periphyton growth throughout our experimentation. This led us to believe that periphyton growth can only thrive in spring and summer seasons. We also believed that using phosphorus as a limiting nutrient may have stunted the growth.

# In Biology 399, I had to write a term paper on an evolutionary topic of my choice. I decided to focus on the negative effects humans impose on species and how this may affect their endangerment status. In my introductory level courses, I learned to properly find and cite articles within my papers to support findings and background information. Using these skills, I was able to find that illegal poaching of animals, climate change, pollution, and poisoning all led to the endangerment of a variety of species. I was able to conclude that humans are the link to causing these species to be put on the endangered list and it’s vital that humans stop their toxic behaviors.

# In Biology 432, I was able to improve on my skills from my introductory ecology class. Here, our class was asked by a local Farmville lake owner to investigate whether it was safe for recreation based on the water quality. Before canoeing out and running tests on the lake, we went to Lancer Park Pond for some practice water quality testing. Similarly to Biology 251, we ran a nutrient bioassay of the pond to figure out what the limiting nutrient on algal growth was. Nitrogen and phosphorous are the two main nutrients which promote algal growth in aquatic ecosystems, therefore we wanted to see if an absence of one would limit algal growth. As we did in Biology 251, samples were taken and various nutrients were added into various treatments. After filtering the samples onto a GFF filter, samples were read on the fluorometer for chlorophyll levels. Through this we concluded that nitrogen was the limiting factor.

# Through these courses, I was able to critically analyze and apply the major principles of ecology and evolution. These courses in particular are the ones which helped to determine what I wanted to do with my career. While I originally wanted to become a veterinarian, I changed gears and decided that I wanted to work in the conservation and water quality field.