Personal Statement

As a boy, my father used to ask me about the meaning of life. Looking back, I like to believe the perspective of an eight-year old fascinated him. However, it is more probable he was gaining reprieve by sending the conversation into another direction. Regardless of intentions, every time he asked, I answered. My answer has changed over the years, but to my memory they were always laced with speculations on the natural world. This childhood captivation has grown to define my interests as a student and researcher. However, my decision to pursue a graduate degree was not an immediate one. It was a host of experiences at Indiana University that opened my eyes to the possibility of spending my adult life thinking about my father's question.

When I look back on my time at Indiana and ponder why I decided to attend graduate school, I recognize three distinct phases. Upon arriving, I was convinced medical school was the place for me. Two years later, I had no idea. Now, I am unequivocally certain of my decision to seek a Ph.D. in evolutionary ecology. My interests and passions have not changed, but exposure to research and natural diversity allowed me to realize them and to see how well being a researcher fit with who I am.

My first laboratory work was going to ensure my medical school resume would be complete. However, my study with Professor Delph, her postdoctoral fellows, and graduate students rapidly became an integral part of my scholarship, no longer another check in the column. Thinking about sexual dimorphism, selection, complex species interactions, and evolution only increased my interest in research and my understanding that I could apply it to a broad range of questions. I could still consider medicine, but in the context of evolution, and probably most important- not to the exclusion of equally fascinating questions about species relationships. Nevertheless, had you asked me then I would have said, "Medical School is still my first choice."

A series of events changed this. Both involved international travel and centered on personal experiences with scholars who had already committed to a course of research. During semester break sophomore year I traveled to Costa Rica for a tropical biology course. For two weeks I trekked through diverse habitats (e.g., arid deserts, tropical moist and wet forests, cloud forests, and high alpine scrub-land). I was riveted by the tremendous diversity. Questions flooded my mind. Why, how, where else, what, why not? Listening to the professors using a theoretical framework to explain organisms they too were seeing for the first time introduced me to the possibility of understanding diversity and adaptation. I returned from the trip energized and determined to pursue a graduate education.

That summer, my newfound decision was confirmed in poignant fashion. I accompanied a postdoctoral fellow in the Delph lab, Dr. Chris Herlihy, to Alençon, France for a three-month field study. I arrived days ahead of Dr. Herlihy, was picked up and driven 100km to the "field site," only to find out that there was no chosen field site. My ride left. I had to secure housing and find suitable populations of *Silene latifolia* (a dioecious plant described in my previous research and research proposal). I did not speak any French. Nevertheless, after three days I was living in a rented house and actively gathering data. In addition, the research itself was complicated. I had a suite of measurements to take for hundreds of plants and had to work out the best way to obtain and record each measurement. Research truly was exploration and I was hooked.

Ten days later Dr. Herlihy arrived, and spending three months learning and living with an actual researcher confirmed the decision I made that winter. One particular conversation still

resonates to this day. After dinner, I asked Chris why he went to graduate school and how his decision was made. The circumstances were different but the result was far too similar to be coincidence. Chris attended a talk by professors looking for motivated students to pursue graduate research. After speaking with many of them he had a realization. "People are actually doing this." Things he had considered simply passions could be applied to the natural world and used to study its diversity. Learning from Chris was the final confirmation I needed.

Again I returned to Indiana invigorated. We began to analyze the data from the summer's work and found some provocative results. Populations being studied in Portugal, by another postdoctoral fellow in the Delph lab, showed strong selection on leaf thickness in males, but France males were not subject to the same selection because of abiotic differences between the populations. The results spoke to the distinct and highly variable pressures imposed by the environment. I found myself thinking, "I can really do this." My junior year would be the first where I was committed to graduate school. Research captivated me and gave meaning to what I had previously known only through course-work.

The next decision I made seemed to many to be one at odds with my decision to become a researcher. To me it was a logical choice. I was selected for an internship with the Foundation for Sustainable Development and traveled to rural Kenya. For ten weeks I worked with a local orphanage and secondary school. I decided that if I was going to spend my adulthood questioning the meaning of life, I should experience different ways of life. Living with a local family, teaching science, and talking with community members exposed me to ways of thinking I might never have considered. Life is complex. Even in parts of the world distinct from our own, things are defined by intricate relationships. These ideas gave meaning to my research interests and it was my experience in Kenya that fully revealed this to me.

In rural Shikokho (Kenya), forty minutes from the nearest paved road, I met others with similar enthusiasms. Every week, I met with a man who had recently completed a Master's degree in climatology. His thesis centered on the connection between climate, crop choice, and malarial prevalence - again, defining nature through relationships. I believe that the drive to question is ubiquitous and traveling to Kenya merely exposed me to the reality of this.

Upon returning home I applied for graduate schools. This application, along with the others, allowed me to synthesize my interests and motivations. I have begun two separate research projects, each centered on the study of complex relationships among species. One association is a mutualism and the other parasitic. Furthermore, teaching others has been incorporated into my work. I received an undergraduate teaching internship with a lecture course on evolution and diversity. Listening to students has built upon what I have previously learned about the universality of human questioning. Helping others to contemplate their own answers to my father's question has already taught me a wealth of knowledge. These often unique perspectives, similar to the ones I gave him decades ago, provided new insights.

Why do species engage in mutualisitc behaviors? What can be learned from interactions considered parasitic? Are there connections? I think so. I look back on my father's question and my experiences of the past years and realize that all along it was these relationships that motivated me. My work will not be defined by thinking of questions one can ask about a particular species, but will focus on how relationships among species affect adaptation and diversity. I am excited about graduate school and looking forward to entering a field I truly enjoy. Receiving the National Science Foundation's Graduate Fellowship will assist me in continuing to think about and study the diversity of the natural world and I thank you for you consideration.