

My decision to pursue a doctorate in the field of environmental science and management is the result of diverse academic and professional research experiences that have instilled in me a firm belief in the importance of interdisciplinary research. Researchers from the natural and social sciences operate in distinct spheres and are often either unable or unwilling to come together to find novel solutions to common problems. This hinders effective policy-making, to the detriment of both society and the environment. I am determined to become a scholar whose work crosses disciplinary boundaries and is equally conversant with ecological and sociological discourse on environmental conservation. With a strong background in the biological sciences, ethnographic field experience in human-wildlife conflict issues, and my course of study at UC Berkeley, I feel well-situated to take on this endeavor.

My first scientific research experience was very much self-initiated—after searching for research assistant positions at wildlife biology research camps in southern Africa, I located an assistant position at the University of Cape Town’s Zoology department. I applied for and received funding for this internship from Dartmouth College’s Dickey Center for International Understanding, and spent a quarter of my junior year assisting a doctoral student’s project examining marine alien invasive species along the rocky shores and estuaries of the eastern coastline. We measured distribution and abundance of two species of alien mussel and one invasive oyster species. I assisted with both field and lab work—taking transects, measuring the length and weight of specimens, preserving specimens, drying out samples and performing data entry. This experience was invaluable in giving me first-hand exposure to the challenges and nuances of experimental design and data collection. I learned also that even “applied” research is often narrowly focused when in the field. The ultimate goal of this invasive species project was to determine whether the invasive oyster could serve as a harvestable source of revenue for communities in an impoverished region of South Africa. However, initial research was limited to collecting distribution and abundance baseline data.

The following summer, I sought out an internship that would expose me directly to the policy and management aspects of environmental science. I was looking for a more applied approach to environmental conservation than my work in Cape Town had provided. My junior summer internship at American Prairie Foundation (APF) gave me an excellent opportunity to take part in research on the “professional” side of environmental conservation. APF is a land trust working with World Wildlife Fund to restore native prairie in northeastern Montana. At APF, I independently researched and prepared a report on bison ecology and the bison industry in Montana, and also helped develop a publication documenting the local economic advantages associated with areas earmarked for conservation. I quickly felt very much a part of APF’s small close-knit team, both professionally and an interpersonally. Working at APF taught me not only about the broad range of research that is incorporated in “on the ground” conservation projects (i.e. economic viability studies, regional socio-economic studies, and ecological research) but also sparked the beginnings of ideas about the ways in which ecological and sociological knowledge could be combined for conservation management strategies.

During my senior year of college, I conducted my honors thesis research in Dr. Samuel Velez’s neurobiology lab, studying the effects of the drug theophylline on synaptic transmission in the superficial flexor muscle in the tail of the crayfish. By the end of my year-long research, I knew that I did not want to be a neurobiologist, but the

experience taught me how to be an independent and rigorous researcher, how to formulate “next-step” questions and adjust methods, how to pace myself, how to do statistical analysis, how to give a presentation of highly technical information to the general public, and when to ask for help—essentially, how to be a scientist.

The summer after graduation I worked as an intern at the Marine Biological Laboratories (MBL) in Woods Hole, Massachusetts, where I created and digitally recorded behavioral tasks to elicit various stereotyped arm movements for *Octopus Bimaculoides*. This project was funded by the U.S. Army, with the ultimate purpose of creating a robotic arm based on the biological principles of the octopus arm. I was responsible for editing, cataloging and analyzing all data footage. In addition, I prepared and delivered presentations about laboratory activities and progress at monthly departmental meetings. My work at MBL had a defined goal, but left most of the experimental design and problem-solving up to me, which furthered my capabilities as a researcher who could work independently, yet also function as part of a team.

The following academic year I conducted research in northern Botswana’s Makgadikgadi Pans National Park as a Reynolds Scholar. The Reynolds Scholarship is a highly competitive Dartmouth grant that funds year-long independent research abroad. My project, supported by Conservation International, examined the impacts of a recently constructed wildlife fence, designed to separate park predators from nearby village livestock, on various stakeholders in the Makgadikgadi region. This experience was seminal in shaping my research interests, exposing me to the complexities of Botswana’s political, social and economic structure, and preparing me for future research of this nature. Here I realized that research integrating biological and sociological knowledge was possible, and in fact of utmost importance. I learned how to conduct household surveys (a skill that can always be improved upon), manage a small research team (a full-time and a part-time assistant), budget limited research funds, do extensive archival research in a foreign country, and navigate through non-U.S. government bureaucracy.

After returning from Botswana, I was selected by a UC Davis Ecology professor to conduct a fully-funded nine month socio-economic study looking at anthropogenic threats to the Mbizi Forest Reserve in southern Tanzania. Although I had logistical support from the Wildlife Conservation Society office in Tanzania, my work was very independent—I was the only foreigner living in the village of Sumbawanga. My Swahili rapidly improved and by the end of my first month I had established contacts with local government officials and made several introductory trips into the remote villages surrounding the reserve. Unfortunately, halfway through my second month in Tanzania I became severely ill and was medically evacuated to a South African hospital. I spent the next several months recovering and was unable to return to Tanzania before the start of my graduate program this fall. My time in Tanzania was a tremendous learning experience—I learned how to establish myself as a researcher in a place more remote and unfamiliar than anywhere I had ever been before, I gained perspective on the environmental policies of an African country very different from Botswana, and I learned how to recover from large, unexpected changes in my research career trajectory.

Given my past research experiences and my current position in two academic divisions—one situated in sociology and the other in ecology—I feel confident in my ability to develop a comprehensive skill set that will enable me to carry out truly interdisciplinary research.