

Personal Statement

My career goal is to be a professor of ecology. In particular, I would like to work at an institution that values both research and teaching and that provides opportunities for mentoring students from diverse backgrounds. Such a position would allow me to integrate research and teaching, in the process awakening interest in ecology among students who, like myself four years ago, are looking elsewhere for career ideas. An NSF graduate research fellowship would allow me to focus my attention testing basic ecological theory about habitat corridors (Intellectual Merit), while simultaneously addressing an issue of central importance in management plans worldwide and continuing K-12 outreach activities in Florida and South Carolina (Broader Impacts).

My discovery of Science: For as long as I can remember I have had a fascination with the beauty of nature and the complexities of species interactions. Growing up in Argentina, Pennsylvania, and Oklahoma I was fortunate to have easy access to forests, pampas, and creeks, where I was captivated by the diversity of living things from snakes to crayfish. In high school as I began pondering careers, I unconsciously assumed that ecology was a dead end. In retrospect, this was because I didn't know any professional ecologists. At the University of Oklahoma I began as a chemical engineering major -- not because I had a particular interest in chemical engineering but because I believed that major would surely land me a "good job." By my sophomore year, I realized that choosing a major based on the job market or potential salary would just as surely land me a dissatisfying career. It was at that point (only 4 years ago!) that I decided to pursue my childhood passion in ecology. I changed my major to zoology, was awarded an NSF-REU position (see Previous Research) and found a series of mentors who have kindled my interest in landscape ecology and fostered my belief that scientists need to do more than do science – they need to communicate their work to the general public and be enthusiastic role models to the next generation.

Importance of mentoring: My richest experiences have come from interacting with mentors. I've learned far more through informal conversations and pondering what they do than I've learned in any classroom. These mentors have had a profound effect on my quick metamorphosis from unenthusiastic chemical engineering student to ecological scientist. They have taught me how to design an experiment, think critically, write effectively, analyze data, and communicate with clarity and enthusiasm. They also motivated me to be a leader, to be conscious of scientific ethics, and to maintain an interdisciplinary and collaborative spirit. Because I've been mentored in mentoring, I now embrace the importance of being a mentor, myself. I am participating in the University of Florida's (UF) Undergraduate Research Assistantship Program (URAP), which pairs graduate students with undergraduates who pursue an independent research project. More far-reaching, I will spend two days per week next year, being a role model to underprivileged youth through an NSF GK-12 program (see below).

Fostering diversity in science from an early age: I recognize the need for mentors and role models at an early age, particularly for those from groups underrepresented in science. I am a Hispanic American and am committed to being an obviously enthusiastic role model for other minority students. Acting on this belief, I volunteered in the Ruth Patrick Science Education Center's Science and Technology Enrichment Program (STEP), which aims to foster children's interest in science and scientists. Side-by-side with kids from extraordinarily diverse backgrounds, we collected data on water quality and recorded the presence of various aquatic invertebrates. I will always remember the excitement and surprise of children looking through a microscope for the first time and discovering a damselfly nymph – a miniature monster! More important, the experiences of STEP convinced many of them that science was fun and allowed them to be scientists, at least for a day.

I am especially excited to continue such activities in 2008-09 as a “SPICE” Fellow. I’ve been accepted in SPICE (Science Partners in Inquiry-based Collaborative Education), an NSF GK-12 that trains graduate students in inquiry-based learning techniques and places them into under-resourced middle schools, where they become teachers, mentors, and role models for disadvantaged youth. This is a major commitment, involving intensive training and 2 days/week in the schools, all of which have large populations of minority students. As with STEP, students will become scientists every time I’m in the classroom. I love that SPICE Fellows are encouraged to be in-your-face role models. For example, they are called “scientists” (not teachers) by students and staff, and they wear bright polo shirts embroidered with the SPICE logo and – in large print – “I am a Scientist.” Students quickly realize that scientists are not socially awkward people in lab coats and that science is a fascinating and dynamic process (not a collection of facts to be memorized for standardized exams). I firmly believe that this type of realization is critically important to both science and society.

SPICE will broaden me and influence those I teach in another fundamentally important way - through providing a non-traditional approach to instruction. It’s a curious fact of academia that although professors rapidly adapt their research techniques, they are often “stuck” in traditional habits of teaching. Practically all teach as they were taught and very few have any formal training in pedagogy. Consequently, going to class is synonymous with going to lecture. Yet, researchers in education agree that lecturing is not the best way to teach. Small group activities and inquiry-based approaches are far better. I believe that graduate education needs to find a better balance between training in research and training in teaching. I wholeheartedly embrace SPICE’s goal of fostering graduate student teaching and communication skills, helping people like me break the cycle of traditional classroom instruction. Armed with the background in pedagogy that SPICE will provide, I am determined to become innovative teacher, exploring new techniques of instruction and integrating science and teaching.

Intercultural perspectives: One reason I chose to attend UF is its rich international community and critical mass of Hispanic American students. It ranks 5th nationally among AAU institutions in the number of PhDs awarded to Hispanics and is the lead institution an NSF AGEP (Alliance for Graduate Education and the Professoriate) program. The primary goal of AGEP is to increase the number of Hispanic and African Americans who enter tenure-track positions at research institutions. I am partially supported by AGEP (\$5,000/year) and am a proud participant in its activities.

I empathize with the difficulty of crossing cultural and language barriers. I was born in Argentina and immigrated to the U.S. when I was six years old. Although I am fully integrated into the U.S. culture, I keep strong ties with Argentina, its people, and its customs. I keenly remember coming to the U.S., not speaking English and feeling a stranger at school. In time, I made a bilingual friend from Chile. Having such a friend made all the difference in the world, helping me adjust and feel at home. Remembering this, I have made an effort to help students from Latin America become accustomed to life in the U.S. I am doing so now with new graduate students in my department at UF and will do so next year with middle school immigrants in SPICE. *In this age of global environmental challenges such as climate change and disease pandemics, it is more important than ever to foster diversity in the workforce and provide strong intercultural perspectives.* I will be a part of that process!