MY WINDING ROAD INTO SCIENCE

For as long as I can remember I have wanted to be a doctor. Until recently, that meant the white coat and black bag of a medical doctor. Then as I stood on a beach in Colima, Mexico searching for rodents, small marsupials, and bats, I realized that the white coat and black bag just wasn't for me.

It all started during the summer of 2003; I had enrolled in a class taught at the University of Oklahoma Biological Station by Dr. Michael Kennedy of the University of Memphis. I thought the two-week course would be a fun and easy way to get an upper-division lab credit, but Dr. Kennedy's enthusiasm for mammalogy was contagious. By the time the class was over, I was infatuated with bats and small rodents and had agreed to accompany Dr. Gary Schnell, of the University of Oklahoma, along with Dr. Kennedy on a collecting trip to the coastal sand forests of southern Mexico. The trip was amazing. Growing up, I didn't have the chance to travel much. The farthest west I had been was Colorado, a stone's throw away in comparison to my Colima expedition. Dr. Kennedy proved to be an even greater inspiration on the trip with words that would haunt me for weeks and would change my life forever. One blustery day as we were checking traps, Dr. Kennedy was jokingly harassing me about becoming a doctor. I responded with something about chasing bats and rats just being something fun. He didn't hesitate with words that I will never forget, "What more could you ask for in a career than something you enjoy?" Despite the mosquitoes, a sprained ankle, and four days of rain (in Colima's dry season), I realized more than anything I wanted to be a biologist. Two weeks later, my scientific career officially began.

Fortunately for me upon returning to Oklahoma, two professors saw something in me and took me under their wings. Drs. Janet Braun and Michael Mares served as my mentors and have enormously influenced, inspired, and encouraged me along every step. From them, I have gained a love and appreciation for South America and its complex flora and fauna, and to them, I owe a great deal of my scientific experiences and accomplishments.

My winding academic road, with inspiring mentors and exciting experiences, has led me directly to mammalogy and prepared me for my future career as a successful mammalogist. From my previous experiences, I have realized the importance in addressing each of the National Science Foundation's defined broader impacts in my current and future research career.

INTEGRATING RESEARCH AND EDUCATION – Education must be incorporated with research at all levels of expertise. As an undergraduate, I was supported by a Research Experiences for Undergraduate (REU) Grant from NSF. The hands-on experience was positive in every aspect, and I hope to pass on my passion for research to my future students. As a researcher, I will apply for REUs and other programs to incorporate participation by undergraduate and graduate students, teachers, and the general public in research. With controversial issues, such as the teaching of evolution, continuing to persist in our society, I believe it is even more important to educate the non-scientific public. I am currently the teaching assistant for a course entitled *Human Heredity*, which teaches non-science undergraduate majors the fundamentals of genetics. As a professor, I would like to teach such a course in evolution to educate non-science students and to improve my skills for discussing scientific subjects with non-science audiences.

ADVANCING DIVERSITY – As a Native American (Cherokee), female from small-town Oklahoma, I can understand the importance of integrating underrepresented groups and geographic regions into science. Fortunately as an undergraduate, I was given numerous opportunities to work under and alongside other underrepresented individuals (I was mentored by a female researcher and a Hispanic professor) who collaborate with scientists throughout

South America. As a scientific professional, I hope to form such collaborations with colleagues of underrepresented groups and perhaps serve as a role model for those who might consider a career in science. My continued research on South American mammals will allow abundant opportunities for working with scientists throughout Latin America. If given the opportunity, I would also like to work with students specifically from Argentina. I hope especially to encourage the participation of Native American students whose tribal upbringings conflict with certain aspects of biological research (i.e. the preparation of museum specimens). By encouraging students into areas of biology that are not incompatible with their beliefs, Native American and all students can make important contribution to biology and science.

ENHANCING SCIENTIFIC UNDERSTANDING – A lack of communication can only impede the advancement of science. As a student researcher, I am dedicated to the continued flow of scientific information among scientists and between scientists and non-scientists. While working at the University of Oklahoma Sam Noble Oklahoma Museum of Natural History, I was actively involved in a public education program known as BioBlitz, an annual initiative to introduce middle school students to ecology, taxonomy, and basic biology and a 24-hour multitaxon biological survey that brings universities, zoos, public schools, and state agencies together. By continuing collaborations with two museum curators at OU, I hope to continue participating in activities such as BioBlitz, increasing my direct involvement with the connection between scientists and non-scientists. I am also a member of the Steering Committee for Legacy Infrastructure Network for Natural Environments (LINNE), a multidisciplinary research coordination network currently awaiting funding from NSF. LINNE will be an interactive network that will link researchers, collections, and research facilities to allow instant access to data on the world's species. By eliminating the many impediments that exist today (uncatalogued specimens, scientists working in isolation, inaccessible fundamental literature, threatened collections, etc.), LINNE hopes to accelerate and improve taxonomic research. For me, LINNE offers the opportunity to interact with researchers from universities, museums, government agencies, and NGO's from the U.S. and England and to be directly involved with a series of workshops and deliverables, which include a database, website, written reports, and a final implementation plan for LINNE.

BENEFITING SOCIETY – With the increasing expansion of the human population and resultant fragmentation of habitats and distributions of animals, certain groups of organisms are highly relevant to public health issues and biosecurity. Rodents have been linked to outbreaks of plague, monkeypox, and Hanta Virus and could be used to introduce infectious diseases to the U.S. To understand and treat these human pathogens, we must understand their evolution, which is linked to the evolution of their hosts. My previous research on *Eligmodontia* (Muridae, Sigmodontinae) established a solid phylogeny for the group, allowing inferences to be made regarding its evolution, historical biogeography, and species limits. The focus of my dissertation research *Akodon* is a known reservoir of Hanta and Junín Viruses and lacks such solid phylogenetic and biogeographic hypotheses limiting the evaluation of its evolution or its role in the evolution of its pathogens.

Although it has been a winding and sometimes bumpy road, my journey is not over. It seems as though my path is leading me straight to a career as a mammalogist studying the diverse and unique rodents of South America. The people, places, and opportunities that I have experienced over the last three years have turned me from a naïve undergraduate unsure of her place in science into a polished graduate researcher, and most importantly, I am ready for the opportunity to inspire and lead future researchers along their winding academic roads.