

## **My Path to Avian Ecology and Graduate Education**

I grew up in a rural area in North Carolina, a place where sidewalks didn't exist, farms and fields littered the landscape, and developments were sparse. My childhood neighborhood is now enveloped by housing developments. Visiting this area every year or two I wondered if and when the urban sprawl, a term I wouldn't learn until my undergraduate days, would stop. Another term I was unfamiliar with as a child was "graduate school". Only recently have I realized how fortunate I am to be a graduate student, as I am a first generation college graduate.

A few years after high school graduation I enrolled in an A.A. program at Valencia Comm. College, in Orlando, FL, hoping one day to transfer into the Florida state university system. As naïve, young adult I knew I wanted to work with animals, unfortunately, becoming a veterinarian was the only option I was aware of. Then one semester I enrolled in a course called "Florida Environmental Systems" where I learned vaguely of the environmental sciences and I was first introduced to "Pssh'ing" as a technique for attracting small passerine birds. A chance reunion with this course's lecturer at a conference this summer was inspirational- Dr. Pamela Smith is the primary reason I enrolled a degree program in Wildlife Ecology. I think is the point at which I realized **how important exposure and mentorship** can be.

After earning my A.A. I transferred to the University of Florida (UF) and began to take courses as a Pre-Vet student. During this time I did not succeed academically or personally. Although this period had a negative impact on my academic record, *I would not opt to re-do it*. Realizing that a career in veterinary medicine was not what I wanted I rerouted my education into Wildlife Ecology. This life-changing decision enabled me to take advantage of volunteer research opportunities offered by grad students, faculty and state agencies. In the beginning stages I learned new field skills like how to capture and tag mice, how to use binoculars and scopes, and assisted with the monitoring and translocation of *Picoides borealis*. At the time I took advantage of any opportunities that arose; I wanted to dip my feet in all the waters (taxa), the world was my oyster.

While enrolled in an avian biology course (Dr. Scott Robinson) I worked with the graduate teaching assistant to enter and analyze data foraging behavioral data on Peruvian flycatchers. Working with a helpful graduate student I was introduced to data management and manipulation, listened in on many hours worth of foraging observations, and realized the rigor involved with collecting field data. Upon completion of this project I worked as an avian collections assistant under Dr. David Steadman, Curator for Ornithology at the Florida Museum of Natural History. I tagged and filed specimens, worked on a special egg identification project and was exposed to the diversity and anatomy of avifauna across the globe, especially of Florida and Peru.

## **Undergraduate Thesis Project**

While enrolled in an avian conservation behavior course (Dr. Katie Sieving) in my department I was given the opportunity to either collaborate with her on an individual project, or assist one of her graduate students with fieldwork—I chose both. With Dr. Sieving's graduate student I learned how to mist net, measure, and band birds, and assisted with a boldness experiment conducted on resident, urban adaptive songbirds. Under the advisement of Dr. Sieving I developed a project that eventually led to employment in the Sieving Lab and to my undergraduate thesis project, "Do actual and perceived landscapes of risks of small forest birds align?", which was funded by the Ordway-Swisher Research Station and an undergraduate research grant from the college. Independently, I conducted point counts in natural areas to determine: (1) where small birds were fearful of predators and (2) where predators were most common. For (1) we detected how small birds responded to the trill of the Eastern Screech Owl

(*Megascops asio*) and for (2) how raptors respond to the distress call playback of the Tufted Titmouse (*Baeolophus bicolor*). Throughout this project I worked with my advisor to assess the integrity and structure of the project and data, and we are preparing to submit a paper (to *The Condor*) stemming from this project: "Distress calls of Tufted Titmouse as a method to enhance detection of raptors". This project provided me the opportunity to practice disseminating my work to both scientists and the public through oral and paper presentations and introduced me to the grant-writing process and basic data analysis and management. Dr. Sieving and this project have been a huge inspiration for me pursuing a graduate degree in avian conservation and wildlife ecology.

### **Neighborhood Nestwatch Fellowship, First Exposure to Outreach in Nat. Sciences**

During the summer before beginning graduate school I was lucky enough to be offered a Fellowship with the Smithsonian Institute's Neighborhood Nestwatch Program (NN) and an Internship with the Florida Fish and Wildlife Conservation Commission (FWC). With NN I worked with a team of 4 other students to plan, coordinate and conduct house-visits in Gainesville, FL wherein we mist-netted and banded resident backyard focal species and performed nest searches. This was the first time I was able to interact with, teach, and learn from citizen scientists such as Audubon members and experienced bird watchers. As a team we worked closely with Girls Place, a local summer day camp for K-12 girls. Here we performed daylong "workshops" where we netted, measured and banded birds, introduced bird watching and identification skills, and allayed the fears some girls had about wildlife in general (see below, under Reichert House). The NN introduced me to the potential of citizen-science based programs and how simple it can be to involve the public in fieldwork activities and monitoring schemes with a little planning, time, and help.

### **M.S. Thesis Work**

As a second-year graduate student I have experienced academia from a new perspective and since my last NSFGRF application I have a better understanding of the rigor, commitment, and passion it takes to pursue a PhD. My research plan will expand our knowledge of synanthropic avifauna and give information to managers and conservationists interested in conserving the rapidly declining House Sparrow (*Passer domesticus*) in its native range. I will submit at least 2 peer-reviewed journal articles from this project: (1) A critical analysis of the House Sparrow population decline in Florida using Christmas Bird Count (CBC) historical data and how urbanization lends into the declines and (2) the distribution of urban House Sparrows and their absence from residential areas. I will initially submit these papers to *The Auk* and *Proceedings B*.

### **Local Service: Reichert House for At-Risk Youth**

I am currently co-coordinating a collaboration involving 5 UF faculty, 2 state agencies, 1 federal agency, 4 graduate student organizations, and 1 police department. Together, we are developing a program to enhance the Natural Resource and Outdoor Education capacities of the Reichert House, a live-in and after school facility for K-12 students who are either on probation or have been court-ordered to attend the program. Upon approval by the city (expected November 2015) we will build a low-maintenance interpretative trail on an undeveloped parcel of their property. I have also made connections with Wild Birds Unlimited and the Friends of the Library for donations of birdseed, bird feeders and field guides. Without the help of these groups, students, and organizations this program would not be possible; without this program there's a chance some of the students may not be exposed to activities as simple as bird watching (I wasn't until I was 20 years old). Coordinating an effort this large has been one of the most rewarding experiences I have had as a graduate student and scientist, and we've only just begun!

I expect to improve the longevity and intellectual accessibility of this project during an upcoming discussion with classmates from across the country in a course I am currently enrolled: "Broader Impacts of Science on Society".

### **Leadership and University Service**

I have served on the Wildlife Graduate Students' Association board as treasurer since 2013, and am currently in training to become a Student Conduct Committee hearing officer. Since 2010 I have captained 12 intramural sports teams (at UF) across 5 sports, of which 9 teams obtained season or tournament championships. In August 2014 I began a relationship with an undergraduate freshman through the University's Minority Mentorship Program and I look forward to cultivating this mentoring relationship. I have involved 5 undergraduate students in the Wildlife, Biology and Animal Sci. programs in my fieldwork as a graduate student. I introduced the students to basic avian identification and observation, netting, and banding; 2 students also assisted with animal care and husbandry with my captive birds at the USDA Wildlife Services Florida Field Station. Personal mentorship and inclusion of undergraduate students in my research will always be a priority of my research.

### **Future Goals and Choice of Institution**

An NSFGRF will *secure my position within the Marzluff Avian Conservation Lab* in the School of the Environment at the Univ. of Washington (UW). At UW I plan to collaborate and work closely with the Urban Ecology Research Lab (Marina Albert, director), a group of interdisciplinary students and researchers in the College of the Built Environment. As a PhD student I will work with UW's "Undergraduate Research" and "Mentor Power for Success" programs to train and mentor students. I would especially like to work with non-traditional students - those who come from challenged backgrounds or are first-in-family college students.

Support from NSF will provide me the time and energy to not only continue working with my local community, but also afford me the opportunity to attend national and international conferences where I can meet and interact with faculty, student and professionals from around the world. The decline of the House Sparrow, a highly adaptable and once successful invader in our cities is of concern internationally, and is of special concern in the United Kingdom. If awarded a GRF I would take full advantage of the international travel opportunities available to NSF fellows; presenting and discussing my work with international researchers is ideal, and it's how broad-scale collaborations often begin. This award will allow me to grow as a researcher and teacher, and to make an impact on Seattle's non-scientific community and on the global community of urban avian ecologists. My goals as an educator/researcher include instructing and mentoring students of all ages and education, generating knowledge for managers to make conservation decisions, and creating effective collaborations with universities, agencies and local youth organizations and public schools. When I envision myself working for a state or federal agency (e.g.-USGS, FWC), I am concerned with the lack of interaction with and impression on young, curious minds. As an academic, I envision myself as a full-time (24/7) researcher, teacher and mentor, and I am content. In this position I will be free to inundate myself in my and my students' research, and explore those questions pertinent to avian conservation.

### **Final Thoughts**

I appreciate the experiences that have shaped my current and future career and academic paths and personal goals. Looking back on these events I realize how important being a cooperator among and a leader to my peers and the non-scientific community is. It is my hope that the process of obtaining a PhD will enhance the skills required to be an effective leader, follower, and ecologist.