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PhD Assistantship-Aquatic Conservation
College of Forest Resources
Mississippi State University

Dear Dr. Colvin,

I just noticed your posting on the Texas A&M job board and it immediately sparked my interest! The opportunity immediately caught my attention involving aquatic species and conservation biology, especially in regards of working with natural resource agencies.

I am currently working towards finishing my MS in Forest Hydrology at Mississippi State University, looking to focus my research efforts conserving our natural resources and ecosystems. We cannot do so, unless our peers have a thorough understanding of the world we live in and anthropogenic effects. Being involved with the work conducted within the Department of Wildlife and Fisheries at Mississippi State University would be an opportunity for me to do just that. I am looking to find a PhD position where I can integrate my experience in conservation, ecology, biology, limnology, and forest hydrology. I want to make a difference in the world we live in, and working with you and the excellent team at MSU would be a great next step in my academic career.

My thesis work pertains to species-specific effects of bark structure and storm meteorological conditions on stemflow generation via stable hydrogen (δD) and oxygen ($\delta^{18}O$) isotopic tracers. My study explores these relationships in an oak-hickory stand in central Mississippi. Stemflow volume and isotopic composition were measured over one year with objectives to determine (i) origins and pathways of stemflow water using stable isotopes, (ii) differences in stemflow generation mechanisms between tree species, and (iii) differences in stemflow generation mechanisms between storm events. I am currently collaborating with the Forest and Wetland Ecohydrology Laboratory at Louisiana State University by utilizing their laser ablation spectroscope to analyze my water samples. Through my thesis work I hope to develop more accurate forest hydrological and biogeochemical models. I also work as a Graduate Research Assistant in the Forest Soils & Hydrology Laboratory at Mississippi State University analyzing Nitrogen and Carbon content in samples ranging from bark and leaves to soil and water. This experience has helped me become efficient with R Studio, GIS, GPS, Excel, experimental design, and writing proposals and grants. I'm hoping to generate two publications this spring from my work.

I've also assisted other graduate students with coastal dune flora and fauna identification, surveying beach visitors, pitfall trap installation and use, identifying endangered and threatened species, scientific diving and invertebrate identification. Most recently, I've been aiding in a predator-prey interactions PhD project. I've learned a great deal about trophic cascades and how prey will alter their diet content from N-rich to C-rich in the presence of predators.

Additionally, I received my BS of Biology from the University of Wisconsin-La Crosse in 2014 where I had the opportunity to take extensive courses such as limnology, animal biology, and ichthyology. I also had the great opportunity to study abroad twice. I studied marine systems at the University of Newcastle-Callaghan in Australia and at South Water Caye, Belize through a faculty-led program. In January 2014 I traveled to Belize and conducted research on *Gorgonia ventalina* (Common Sea Fan) infected with *Aspergillus sydowii*. I analyzed data relative to sea fan densities and disease prevalence (Aspergillosis). This experience has given me a strong understanding of scientific procedures, methods, and analyses.

In 2014 I interned with the National Marine Mammal Foundation (NMMF) through the U.S. Navy. My involvement with the program allowed me to work with both California Sea Lions and Bottlenose Dolphins. I was able to help the animal trainers with simple and advanced trainings, along with feeding and caring for the animals, including medical practices. Also, I conducted research with both sea lion auditory systems and dolphin echolocation. Not only has this experience expanded my field experience and research involvement, but it has taught me an array of knowledge of marine mammals, and to work well both individually and as a team. Skills that I've gained from the NMMF that will be useful for this internship include working both nights and days, recording data, preparing equipment for future endeavors including basic boat upkeep, open ocean boat training, working in a fish house, and facility maintenance.

Furthermore, previous employment at a landscaping and greenhouse facility have given me additional skills such as the care and operation of small engines and ATVs. I also have an extensive course history with many Communication Studies courses, which with my Biology and future Forestry degrees, make me a great candidate for this position. My previous internship taught me to work in adverse conditions, especially at night during security patrols around the facility and giving night medications to the animals. Furthermore, I have my PADI Open Water and NAUI Advanced Scuba Certifications, along with Adult and Pediatrics CPR/First Aid and AED Certifications.

I would like to be considered for this opportunity to better my understanding of the conservation of aquatic ecosystems and species being drastically effected by anthropogenic factors. I will bring a unique perspective to your extensive team of scientists. I am looking to learn new skills and enhance my integrative science research background. I look forward to hearing from you! Thank you for your time and consideration.

Sincerely,

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