**NRT: Next-Generation Biodiversity Training**

Many graduate scientific programs train Master’s and Ph.D. students primarily for careers in academia; even if there is some attention paid to “alternative” tracks, the de facto system still provides little effective training for this. Programs in colleges of agriculture do have more of an applied focus, but may lack a focus on natural history of diverse environments. Yet, the US faces a key need for next-generation biodiversity researchers to work outside of academia. To understand emerging infectious diseases, detect and stop invasive species, manage natural resources, and understand how to conserve biodiversity in the face of anthropogenic change, we need biologists trained in a wide array of skills. **Our research area and theme** focuses on interdisciplinary training of biologists for careers outside academia with the necessary biological, technological, and leadership skills required for success. Our team merges faculty from three departments, representing both a liberal arts college and a college of agriculture. The University of Tennessee, Knoxville, is both the flagship research university and the land grant university of the state, and its key mission is to do cutting-edge research that can also translate into directly useful outcomes. We will train **17** **Master’s and Ph.D. students** directly as funded trainees, **45 other affiliate students** participating in grant activities, and **60 external participants** taking field courses or skills workshops developed as part of the program (**a grand total of** **122 students**). **Long-term sustainability** of the program locally comes from repackaging existing courses for a new kind of audience, persistent connections between departments, and a deep connection with internship partners. More generally, the lessons learned, including both successes and failures, will be communicated through peer-reviewed publications led by our external assessment team so that others may build upon them.

The **training plan** covers six components. **1)** Internships with private companies, NGOs, and government organizations; **2)** core biological training, including field courses; **3)** technology training in areas such as GIS and informatics, using existing courses and workshops; **4)** leadership, management, and communication training, including regular courses and a new workshop in science communication; **5)** trainee outreach at popular events to connect the public to science; and **6)** multidisciplinary advisory committees to train students. Throughout the life of the grant, integration with our external partners will help us tailor training to meet key needs they identify. This is an aspect of **research-education integration** within the grant, as are the assessment and the individual research projects performed by the trainees.

**Intellectual Merit**: Trainee research projects will span a variety of biodiversity questions, including conservation, ecosystem services, analysis of biological communities, and development of new models. We will also publish in a peer-reviewed journal assessments of the traineeship model.

**Broader impacts:** It is increasingly recognized that graduate programs in sciences should not focus on just churning out future faculty (Nature Editorial Board 2014), however, few programs are configured for broader career outcomes. This project builds connections between graduate students and professionals outside academia while training students for a wide variety of positions focused on biodiversity. The addition of necessary practical skills such as project management and assessment will position graduates to be strongly competitive and ultimately more successful in industry or academia. The open nature of the training also pushes scientific knowledge out into the public domain where professionals can learn from it, fulfilling a classic role of land grant institutions; training of students in scientific communication will assist with this. Students will also communicate about alternative scientific careers at Darwin Day and Ag Day, two long-running events that reach hundreds of members of the public annually.