**Data Management Plan.**

This project will generate three kinds of data: 1) assessment data on the students and the training, 2) materials generated for teaching in workshops, and 3) data generated in the course of research by grant participants.

**Assessment Data**

The external evaluator, Principal Investigator, and Project Coordinator will meet early in the first year of the grant to establish a written plan for assessment data protocols, including compliance with the policies of the Institutional Review Board (IRB) at the University of Tennessee, Knoxville. The Project Coordinator will receive training regarding student data and research data management policies.

Assessment Instruments. All data collection instruments will be saved in commonly used formats (Word, PDF, Excel) to facilitate ease of use among team members. Instruments will additionally be publicly shared to facilitate reuse in the manner described for research data (below).

Digital Assessment Data. Assesssment data will be collected confidentially with permission from the participants and stored securely with the external evaluator (EMEC). Assessment data will be saved in commonly used formats (Word, PDF, Excel) to facilitate ease of use among team members. The external evaluator will share the data with the PI and program coordinator, and the data will be stored on a password protected computer in secure location under the control of the lead PI with additional long term archival storage in Office 365 OneDrive. This cloud based storage solution is offered by UTK in partnership with Microsoft, and features include: up to 1Tb per faculty member; secure transfer of data; group sharing within UTK; encryption of data at rest, on the server side and in transit; and certification for storage of HIPAA/PHI, FERPA and PII data.

Paper Assessment Data. Any data collected via pen and paper and consent forms will be stored in a locked cabinet of the Project Coordinator.

**Teaching materials**

Teaching materials will be distributed during or immediately after instruction under the open access Creative Commons 0 (CC0) license allowing for educational reuse. Materials will be available via dedicated training websites but also deposited on GitHub, with citable DOIs provided by Zenodo. As best practices change, we will adapt to ensure the materials are reusable and available without any registration or login barriers. Teaching materials will include slides, exercises, notes and videos. Staton and O’Meara have a significant record of doing this already using the GitHub platform.

**Research data**

All team members (faculty, staff and students) will take the CITI training in Responsible Conduct of Research. Research data will be placed in appropriate repositories for each kind of data at the time of publication. Possible research products:

* Genetic data will be deposited in NCBI’s GenBank or Sequence Read Archive, which maintains long-term storage and free reuse.
* Phylogenetic trees will be placed in both the TreeBase and Open Tree of Life repositories under a Creative Commons Zero (CC0) license allowing free reuse.
* GIS data will be pushed to the Global Biodiversity Information Facility (GBIF), also under a CC0 license. The only exception would be for species of conservation concern where disclosure of locations could lead to their targeting by collectors or other bad actors.
* Research software created will be published via GitHub and language-specific repositories (such as CRAN for the R language) under an open source license.
* Specimen vouchers will be deposited in appropriate repositories. For example, primary types of any new insect species described would go to either the United States National Museum (Smithsonian) or the preferred repository of the agency that issued the collecting permit. Non-type insect specimens would be placed in the University of Tennessee Insect Museum and other important collections as deemed appropriate by the research leader. Ethanol-preserved specimens suitable for DNA analysis and DNA vouchers would be stored in the PI’s laboratories but will be made available to interested researchers upon request.  Plant specimens will be obtained and submitted as vouchers to either the University of Tennessee Herbarium or to an appropriate national herbarium.

In addition to the specialized types of data above, data for all publications resulting from this grant will be available via Dryad, a journal and society-sponsored repository that maintains data long term and allows its citation and reuse. All data deposited on Dryad are CC0 licensed.