

## Louisa Carter

### Education

B.S. Sociology and Biology, Furman University (Greenville, SC)

M.S. Environmental Studies, College of Charleston (Charleston, SC)

### Research Interests

Owing to a multidisciplinary educational background, my research interests are rather broad, but can be best categorized into the fields of ecological genetics and the evolution of geographical range limits in plant genera and species.

More specifically, I am interested in answering the following questions:

- 1) Why do closely related plant sister taxa have such different geographical range limits? (i.e. Why do you see some species that are very narrowly endemic, while their sister species are very broadly distributed?)
- 2) What are the historical and ecological reasons for these patterns?
- 3) Can ecological niche modeling be used to identify current and future suitable habitat for species that are considered to be of conservation concern?
- 4) How has global climate change in the past affected species distribution, and can these patterns be used to predict future change given the current climate changes occurring?

These questions are easily applied to plant taxa that have specific geographical distributions, like those of *Sarracenia* (Pitcher Plants) or the study system I work with, *Polygonella* (Polygonaceae; buckwheat). One particularly interesting characteristic of this genus is a striking difference in mating system among the eleven species. Within this genus, species are either synoecious (hermaphroditic), gynomonoeious, gynodioecious, or dioecious. This characteristic makes *Polygonella* a potentially useful study system for further investigating the evolution of mating system in plants.



Peanut, my avid collections assistant...



*Polygonella robusta*