



## ***Crop Wild Relatives and the Role of Herbaria in Future Food Crop Security***

**Makenzie E. Mabry**

iDigBio, Florida Museum of Natural History, University of Florida

### **Bio:**

Makenzie E. Mabry is an iDigBio postdoctoral researcher with the Florida Museum of Natural History at the University of Florida. She completed her PhD at the University of Missouri where she researched the evolutionary history of *Brassica oleracea*. Her research focuses on understanding the genetic diversity and ecological roles of crop wild relatives of the Brassica family. She is particularly interested in the potential of these wild relatives to provide genetic resources for improving crop resilience and nutritional value in the face of climate change.

### **Plenary Abstract:**

Although Nicolai Vavilov recognized the potential of crop wild relatives (CWR) in the early 1900s, with the advent of genome editing techniques like CRISPR, scientists worldwide are now able to fully leverage the potential of CWRs as a source of diversity for cultivated populations. With global crop production facing increasing threats from climate change, plant biologists are tasked with finding ways to continue production of crops that can withstand changes to environmental conditions and to increase production to supply a growing population. CWRs provide a source of diversity that can be used to meet these demands. While there are concerted efforts to increase collections of CWRs in germplasms, herbaria have been an overlooked resource. Additionally, many herbarium records now have digital equivalents which can be used to address large research questions. Occurrence records from iDigBio, the Global Biodiversity Information Facility (GBIF), and the USGS Biodiversity Information Serving Our Nation (BISON) repositories were downloaded for CWRs of several important crop species. Following data cleaning, we performed ecological niche modeling to determine global niche suitability for both current and future climate scenarios. We hope this study highlights the important role of herbaria in future crop breeding efforts, especially in the face of climate change.