**Name: \_\_\_\_\_Elizabeth McMurchie\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_August 25, 2021\_\_\_**

1. General Info
   1. Proposed Title: *Evaluating patterns of variation in foliar, lemma, and palea micromorphology in Guadua (Poaceae: Bambusoideae: Bambuseae)*
   2. Likely coauthors: *Lynn Clark*
   3. Proposed journal (1st choice): *Botanical Journal of the Linnean Society*
   4. Proposed journal (backup): *Plant Systematics and Evolution*
2. The overarching question of this paper is *what drives variation in* Guadua *foliage leaf micromorphology*
3. Which is important/interesting/unresolved because (1-4 reasons)
   1. *Micromorphology of foliage leaves, lemmas, and paleas differs by species*
   2. *Patterns in micromorphology appear associated with macromorphological patterns that are in turn associated with ecology (primarily forest vs. savanna habitat)*
   3. *It’s unknown whether these patterns in micromorphology are associated with different clades (i.e. is there a “dense papillae and broad silica body” clade)*
   4. *It’s also unknown whether patterns in foliage leaf micromorphology are tied to patterns in lemma and palea micromorphology*
4. To answer this question/explore this topic, I addressed the following objectives: (NB you can have more or less than 3 objectives, but I recommend 2-4)
   1. *Which micromorphological characters vary with habitat?*
   2. *Are the variations in micromorphological characters based on habitat statistically significant?*
   3. *Are patterns in micromorphology of lemmas and paleas consistent with patterns in foliage leaves?*
5. I addressed these objectives: (use list/bullet points below)
   1. In *Central and South America*
   2. With the following focal/model species/model system: Guadua*, a genus of woody bamboo from the Americas*
   3. And the following approaches: *Likely with factorial MANOVA* *(although I’d like to see if there are better techniques)*
6. Each row of data in my dataset is a *specimen of* Guadua, *with characters (present/absent) filled in*.
7. For my analysis, I want to test: *Whether the differences in micromorphological characters are dependent on habitat type and whether these differences are statistically significant*
8. My response (y-axis) variable is: *presence/absence of different micromorphological characters*
9. My predictors (x-axis/colors/shapes on the graph) are: *habitat type (savanna or forest)*
10. I replicated this across multiple *specimens*
11. I think I will need to analyze these data using a *Factorial MANOVA with PCOA for visualization*
12. I anticipate I will get a final figure(s) that will look like this *[sketch one or more figures below that you could imagine being part of the final paper]*

*Not a sketch, but a test image we did with partial data below*

