1. Make visual design of the final sketch.
2. Ethics training and evaluation using IRB protocol(research using humans)?
   1. CITI training **done**—next step, research
   2. IRB proposal – how it will involve human subjects and they have to approve ethics. What it is im tryna prove with my system. (check up on pitfall paper). What is it that my viz solves and how to validate how viz solves that.
3. Concurrently, contact experts who can evaluate the design. (contact them after irb approves the proposal)

**Research Problem**: Certain conditions/diseases tend to have associations with microbiomes in varying abundances. For instance, condition X can have microbiomes Y and Z with y% and z% abundance. Accordingly, a bunch of diseases/conditions have associations with different microbiomes. Any given person Q can have a variety of conditions and Q’s physician may be curious in seeing what microbiomes Q has so the physician can suggest actions to Q to remedy/lessen these conditions. In current medical practice, surgeons can look at MRIs and figure out what is wrong with a person in an instant. However, we don’t have an MRI-type figure(for microbiome associations with diseases/conditions) that physicians can look at to figure out instantly what may be wrong in a person’s microbiome corpus and what course of action is most appropriate to diversify or improve the corpus. Therefore, a need of a visualization arises and the researchers at the U have worked over the last X months to come up with a design that best fits the microbiome data.

Next step: How to validate this visualization with actual physicians? Validation is can physicians draw meaningful conclusions from it? Imagine a patient comes to you and asks you about viz. What do you tell them? Pinpoint questions about what is the worst microbiome? Are they picking up what I have designed? Quasi-Quantitaitve questions about viz, mostly qualitative questions.

Meetings with physicians are upto 30 mins. IRB may not even require implementations. Physicians will require implementations though. Explicitness that data is anonymized. Lets see how we are with implementation in 2 weeks.

Plan: DO implementation first

Talk to Leo about proposal.

Second paper can expand to include general populace.

Potential idea: We came up with a lot of designs and we think that one design best fits the data. Would our physicians agree with us? Is there a gap in how visualization researchers expect a design to be versus what the physicians actually prefer?