Appendix III: Prototype Evaluation Results

Dashboard	Improvement	Supporting Quotes	Feasibility
Academic Impact	Overall	• "When we put together some of the stats for the collections for loans, they wanted to know loans that went for teaching on campus, for tours, were they tours for elementary school kids versus a retired couple from the community versus a research scientist [...] Those are not things we track in our database, so some of those things too might impact the way that we record things on our end as well." • "So that was another thing we were asked to look at in RPAC was number of loans in the US and number of loans internationally."	
	Make the Square Table more intuitive	• "[The size legend] I feel doesn't correlate like I get that you're saying it's bigger, but [...] I would just hover on it, right, to get the numbers. I wouldn't really use that." • "I find this table not as intuitive than other types of visualizations [...] I don't know what it is to be honest, but it's kind of like…I think it's hard to maybe make the line up without lines in between or something […] Like if it just had a full-on grid, I don't know. [...] Actually what's throwing me is the herps encroaching [...] like it was over the line or something [...] [The table with row dividing lines] looks busy but I mean, I think if you did them the same width, that actually somehow is easier for me personally. [...] It just categorizes things into boxes which people like." • "[The size legend] I feel like doesn't correlate, like I get that you're saying it's bigger but [...] I would just hover on it to get the numbers. I wouldn't really use that."	Feasible
	Make filters more flexible	• "I was just thinking how like for older things the data download's not really relevant anyhow, so maybe to just see citation and loan side by side and then filter by year is what I was thinking of trying now, just to take out the newer stuff, just to see what it looks like." • "Especially with the bird and the bird-egg-nest, like that I feel like you might want to look at them together. The others are pretty different things, so I think it depends how the categories were, right?"	Feasible
	Change the Timeline to use stacked bars	• "I was thinking of like either grant proposals or if you had a grant report to show like especially for this one, right, if you wanted to show like oh look at how much my - and that might be where the bars might be nicer than this to like really see a, you know, even though you can see the trend here. I wonder if it would be like a tiny bar and then a huge bar next to it or something like that right and then just copy a picture into whatever it is instead of the link."	Feasible

Broader Impact	Overall	• "That's cool, seeing changes in total participation over time. Yeah I am curious to know how many visitors we actually get over the years." • "Actually, I do like this last bullet to communicating broader impacts to others including administrators and grant agencies. The idea that you could take like a screenshot of this and put it into like a grant proposal or final report [...] That's always the hardest section to write, too." • "I definitely like how you can break tours into different categories because that definingly is going to be important for sure [...] A lot of grants now want to know how many K-12 students you're serving versus other people." • "I realize it looks really complicated, but I really do think this would simplify so many things."	
	Connected dashboards / having multiple in one workbook	[no direct quote]	For Future
Collection Scope	Overall	• "This is a super way to navigate our collection. And the benefits of that are not just for the public but also for us internally" • "But to actually see it in a dashboard's format would be very compelling for me to be able to interpret it for others. And I think this is really fascinating." • "We've talked about digitization as unlocking the cabinets, getting more people to see it. But unless you have a way to actually still communicate it...Just putting out a dataset is useful for a lot of types of researchers, no question. But what is it really telling the average person who wants to know about your collection? [...] You have to be curious, and this kind of thing makes you more curious." • "Some tools like the map are totally applicable to all kinds of collections because I think it's interesting for anyone to know where's the bulk of your collection and what categories [...], like 'oh we're missing something' could be of interest and where is everything from." • "I'm humbled by this because there's something about this, to me, that's mesmerizing." • "There's so many things that this could be the stepping-off point for." • "I just see so many cool things you can do with this [...] I think the possibilities are endless." • "Different avenues that you wouldn't have gone if you were just doing a direct search"	
	Incorporating images	• "The only thing, just being a botanist, I want to see some plants" • "This would be really cool if we could get our digital images linked there because all of a sudden boom [...] it's like everything blossoms in yours eyes."	For Future

Collection Scope	Incorporating more customizability for domain-specific data comparisons	• "For us looking at geologic time would be really important." • "In terms of data models, we kind of want that into something called geologic context, so it's time units and rock units [...] like distribution of our collection in geologic time." • "So not just limit yourself to year, but maybe just have them both as customizable, you know, if you want to compare either one or what you could do is compare families with species, like these are the families that we have and then these are the number of species within those families and the abundance. That might be useful." • "You could have one that says alright which cabinet downstairs in the basement has the most, you know. That'd be amazing too." • "This would be cool if you could actually do it by month so you could get phenology data to be when things were collected. You know, like the spring ephemerals versus maybe conifers and stuff in the winter [...] same with birds [...] things that appear and disappear in term of migration."	Feasible
	Cultural appropriate data storytelling	• "I'm wondering if there's some way that data could be more culturally appropriate for different cultures than the way we represent it just out of the database itself, so I feel like this could actually potentially be a tool to aid that dialogue right now and let people be able to show information in a more different sense, a more culturally appropriate sense than it can be now." • "In humanities collections, the focus isn't always on aggregating data. It's really about the story objects are telling, not always what can I analyze but what is the story?	For Future
	Geographic unit flexibility	• "Can you have UTM, or does it only deal with lat and longitude […] We have a lot of stuff that's in UTM."	Feasible
	Connected dashboards / having multiple in one workbook	• "I'm just wondering if you could group them so it's auto-summarizing. I mean obviously you can do that in your own spreadsheet. [...] If there was a way to do that that'd be cool because then you could have the same worksheet that it's pulling data from doing different tasks for different users without having to create different versions. So, then you could have it all in one dashboard even where it's kind of like a basic summary and then high resolution."	For Future

Collection Scope	Incorporating more data fields	• "I know for researchers, it's like if they have a query it's like a lot of times it's the collector or the person who did the ID and like the prep type." • "I think it seems like a lot of collection managers would want a few more filters added in." • "I don't know if [prep type]'s super useful for researchers necessarily but [...] from a collection management standpoint it kind of just shows the footprint [...] in this collection it feels equal because we have two equal sides but actually we have way more wet fluid specimens, which just has different management implications." • "One thing that I think might be interesting to include on this is [...] identifiedBy and dateIdentified[...] This would be a way to look at how recently your things have been identified [...] and that also gives you some confidence on how much to trust the ID." • "I don't think you need to actually do part types, like that might not be that interesting, like skulls versus skeleton, but I do think tissues is like its own category."	Feasible
	Adding extra info	• "I think one thing that's important to a lot of collections is kind of saying the things we have the most of, and you can get at that this way, but if this were public-facing, something you'd probably want to highlight [...] the focal things, whether that's [...] we've done the several expeditions to Central America or these are the taxa that our curators have been working on for decades. Yeah, something that kind of really pulls that out would be interesting."	"If there's some way you could sort of click and have some kind of interactive thing that said the strengths of the collection [...] You have specimens but then you also have some descriptive information [...] You have all this data but then it becomes alive [...] It just gives it another layer."	Feasible
	Add counts to Treemap Tooltip	• "Is there a way again to have just some text and say 'so many genera, so many species'?"	Feasible
Project Management	Overall	• "I think being able to visually show people like this is the workload of a human being in this position can actually do a lot to help them understand the reality rather than the perception of how much work is being done or how much more is required." "It is very nice to be able to plug in stuff at the beginning of a project so that you don't have to keep bouncing around all those different documents." • "I can see project management just being a really use of this that's so natural and such a good way of reporting up. So, it's almost like to manage a project you don't necessarily need the dashboard. You need the budget piece and you need the schedule. Those are the minimum things that you need to get you where you're going, but if you want to show anyone or be able to demonstrate what's going on that's where the dashboard is so unique and helpful"	

Project Management	Add additional budget information	• "So, is this how much is spent and this is how much is remaining? I'd love to have a total number - just budget meter with a total number I have to spend. Obviously, we have to know how much we've spent and how much we've got left, but I'd just love to throw that out there."	Feasible
	Accommodate long term projects	• "If we had a multi-year project, is there a way to like divide this into three units? [...] I worry that in a long project right, it's a three year grant, all this could be so squished up that you're not seeing enough detail about what overlaps what, whereas if you could have different views for different years [...] I wouldn't want to have to have a separate one of these for each year because it's the same grant, we're still working with the same amount of money, we're still divvying it up. [...] I like the scroll idea."	Feasible
	Accommodate tracking individual people instead	• "If I've got four databasers, I just make Databaser 1 and that's assigned to a person, then Databaser 2 and that's assigned to a person. [...] If we've got four undergraduates who are databasing I want to track each one of those individually. So, I'll just make each one of those their own [...] subtask. And that way they could have different beginning and end dates if somebody quits or gets fired, and I could track each person individually."	Feasible
Teaching Collection	Overall	• "It's very cool and I think, you know, given 10 minutes with it somebody could figure it out [...] it just seems really powerful to have it laid out this clearly and this cleanly. [...] I think the connections are really obvious and logical."	
	Add extra information	• "Do you have someplace where you could define those conditions so that if somebody else was coming along and either trying to categorize things or use it, they would know what they meant? […] One person's 'fair' might be another person's 'good'."	Feasible
	Adding data fields	• "I think especially for the education collection where people might be handling it, so since it's used by the general public. [...] I think probably for the behind-the-scenes handling the condition is good, but for the in-front-of-the-scenes having that handling level would be good." • "I do think it would be worth knowing if something is in the building or out of the building." • "One of the things that I always want to know for our things that are in use is, and probably for display too but more for in use, is who's the most responsible person for that object while it's out of the collection because if something happens to it and it doesn't come back and it stays 'in use' here for three years, you know that we need to figure out what happened to it and where it went [...] It may not be necessary that it show up on the full dashboard [...] could it be a filter?"	Feasible
	Add loan tracking feature	• "It'd be nice if this would say 'x number of loans are due back today' and then if they didn't come back you could follow up with it."	Feasible

Teaching Collection	Connected dashboards / having multiple in one workbook	• "If you had something here that said 'on loan', could you click on it and have it open a new dashboard? Are the dashboards linked in any way?"	For Future