Good morning. If you are here for the next session of the management track, you are in the right place. And up next is Shannon McHarg and her colleague Maroya, and they will be talking about teaching usability testing through peer training.

Good morning. I'm Shannon McHarg. I'm user experience designer at the Office of Natural Resources Revenue, and my colleague Maroya Faied is a program analyst and she is in Denver right now, so she is on the line. Maroya, can you say hi, so we know you have voice?

Hi, this is Maroya.

All right. We will work out her parts later on in the presentation, so hopefully she can get up and running by then. So, I'm going to be talking to you a little bit about how we are teaching digital skills through peer training at our agency.

So, who are we? What is the Office of Natural Resources Revenue? We are a small agency that a lot of people have not heard of. Even the people at the main Interior building hadn't heard of it when I came in on my first day and said I'm going to the Office of Natural Resources Revenue.

So, this is our mission statement: For the benefit of all Americans, ONRR collects, accounts for, and verifies natural resource and energy revenues due to States, Native Americans, and the U.S. Treasury. So we track all of the revenue that comes in from natural resources that are extracted on federally owned land and waters throughout the country. And then we distribute the money out to other places like the Treasury and the Land and Water Conservation Fund, and States, and Native American tribes.

What we work on is our team manages a website that has open data with all of the data that's come into our agency. It is the Natural Resources Revenue Data Portal which is where the NRRD comes from in our slide deck there; that's kind of our name for our team. It has data about both the federal and state level for all of the revenues brought in and going out from natural resources on federal lands and waters. We also manage the Native American lands and waters as well.

This is the vision statement for our website: We're informing policy debates and raising public awareness by building the definitive source of timely and useful data about how the government manages federal energy and mineral resources, revenue, and disbursements.

So, to just give you a little bit about background about who uses our site, we found that the important parts about the differences between who uses our site are in how they find the data and how they use the data. We've kind of got four clusters of people that use the site.

The first is Question Answerers, which are people like Congressional staffers and people who work for agencies who are answering questions about the data for other people. They tend to have a known question when they come to the site, and then provide an answer to that question. They'll be dropping it in an email or answering on a phone call, or something like that.

Agenda Supporters are people who are like representatives from a nongovernmental organization who have an agenda; they already have in mind when they come to the site and are looking for numbers to support that agenda. They may be doing a little bit more exploration than the Question Answerers and they may be doing a little bit more with presenting the data in different ways than somebody who is just straight up answering a question.

We have Storytellers or people who are like journalists or academics who are looking for a story in the data and then presenting it in an article or a chart or something to tell the story.

Then we have Domain Learners who are people like county commissioners, tribal leaders, and people who work for other federal agencies who have their domains of expertise, a city, a state, a tribe. And then they are learning about that and making decisions or presenting data or answering questions about it.

So that's who uses our site.

So, our site, how it got started was the U.S. decided to join the Extractive Industries Transparency Initiative [EITI] which is an international initiative to provide open data about the extractive industries. And we joined it with a Presidential Innovation Fellow who started the site and they became one of the founders of 18F, and then 18F picked up the site, and then today we have our own in-house team that we have transitioned from 18F. This is our team today. We have a product owner, three term-limited innovation specialists -- we all came from the private sector with more than a decade each of experience in our respective areas -- and we've got three career government employees who are all program analysts [indiscernible] who will be there for the long term, and we're training in additional skills.

So this is kind of a long story of how we got here, which is a bunch of stuff about the EITI and our path using that. We pulled out of the EITI in 2017 and had to reframe our site and figure out what our new constraints were.

But our site is still alive because of the Open Data Act and IDEA Act and all these acts that have been passed about open data and improving additional experiences. We're still here today and I'm not going to go into detail on this but this is kind of how the sausage is made.

This is our user centered design process; it's pretty standard -- we identify problems, formulate and validate the hypotheses, generate and test solutions and select the final solution, build it, validate it, and keep going in a circle. Today we are going to be mostly talking about generating a testing solution using user research.

Now we are going to talk a little bit about the peer training process, why we decided to peer train. So the scope of our site keeps increasing and changing and we're constantly needing to understand what our users need now that we're no longer constrained by the EITI. There's also other teams in our agency who were becoming interested in user research so we wanted to be able to spread the skills throughout the agency. And we have a small team with only term limited designer, so we need to be able to extend our capacity. And then recruiting also takes a lot of time so that is something that we really want to get people up to speed on.

When Lindsay and Maroya said they were interested in learning how to do user research, we got together and decided it would probably be best for them to learn by doing, so we decided to do mock interviews. We have very limited access to our users because it's a very niche user set and we didn't want to waste them with our training program, so we decided to test with our teammates pretending to be the users.

That meant I needed to document all of my processes in detail which I had not done up until that so I spent a bunch of time documenting what I did for user interviews. While I did that, my teammates started reading about user research and learning the basics from the experts.

This is the process that I boiled it down to as I was documenting it. For planning they decided on study goals, they wrote a study plan and interview guides; they learned how to recruit participants and making plans for notetaking. For all of our studies, we have our teammates take notes. We always need to make sure someone is taking them because we are not recording them for privacy reasons; so we want to make sure we have somebody to do that. They conducted the study by facilitating and doing our debrief. After every session to make sure that we are capturing everything in the notes, we do a debrief right after every session. And then the analysis they consolidated findings, identifying trends and recommendations and present it to the team and posted the findings on GitHub which we always do since everything we do is out on GitHub since our site is open source.

[Cut in video?]

We do look at our analytics. The question was: Do we use analytics as well as doing user research? We do look at our analytics and try to tie it to user types I went through. We've gone into our analytics and tried to identify a lot of them. So, the Academic ends up looking really big because we're identifying them by the server they're coming from and universities are really good at tagging themselves as universities. We've got some level of tagging users types, but 80% are still unidentified.

[Participant question off mic]

When they did the mock interviews, after every session I gave them direct feedback on things they could have probed into or things like that as they were going through it. That's a great thing about doing a mock interview where they were actually doing it, [indiscernible]. It's direct feedback.

Here's a sample of the study plan. We put them all up on GitHub and this is what it ends up looking like. We have the background, the goals, the methods, the desired participants, the recruitment strategy and test assets. This recruitment strategy would have been if it was a real study. They framed up what we were testing.

This was the guide with specific questions they ran through as they were testing. Some of this was copying and pasting from our standard, like the consent form and testing the prototype. Some of that is pretty standard, but then they were focusing a lot on the tasks and questions specific to the designs that we were testing.

Do we have Maroya on the line?

I'm here.

She will talk about what she learned during the planning phase.

Hi, I am Maroya Faied, program analyst on the team and one of the two people Shannon trained. I will be speaking about what I learned in each process of the peer training.

In the planning process Shannon just talked about, I learned that setting and deciding on the goals of the study is tough and that you have to think about a few things such as what aspects of the product might not be as usable as they should be and also what tasks we would have participants do in such a short time we have with them.

So I learned that setting clear goals is very critical to successful testing and absolutely necessary for a smooth and useful testing. I then thought about the recruiting process, and making decisions of how many participants to test, and to decide on what type of user groups of participants do we desire to test -- such as Question Answerers, Agenda Supporters, Storytellers, Domain Learners -- and also to think about whether to include participants who have no experience with our product versus including participants who are familiar with our product.

After making those decisions, we then thought about what methods will we use to recruit them. What I learned is that it is tough and that you have to use all the resources available. Overall, in this process, I learned that defining clear goals in the planning makes the rest much easier and also planning requires teamwork because there are many decisions to be made in planning a test. The more team members that come together in planning the test, the more likely that we will have a useful test. I'll pass it on to Shannon to talk about conducting the study.

After they planned the session -- I forgot to mention they each wrote their own plan -- we took the best pieces from both as we reviewing them and coming up with what to use in the study. So, connecting the study, they took turns back and forth facilitating. I was there to take notes and then we had a different teammate pretend to be a user. I told them you're going to be a journalist and you're going to be whatever the user type was; they also threw in some curveballs, like technology issues. They had a lot of fun with it. They conducted the study, they communicated with participants, and troubleshot all the technology issues. We had a notetaker and coordinated the post-session debriefs and after each session I critiqued their facilitation and provided feedback on everything.

Maroya is going to talk a little bit about what she learned from this piece of the study.

One of the main lessons I learned from conducting the study is the importance of being organized and how it has an impact on the participants. For example, I learned I need to be prepared if there are any technical issues with Google Hangout, having instructions to share their screen or conference line ready for them to use if there any sound issues. Also, having links ready to send such as the form for participant rights or any link to prototypes ready to be sent. I also learned that it's very important to start by introducing the test environment and to let the participants know there's no right or wrong answers and that we are not testing them, but testing the product and observing how they are using it. I also learned that being prepared during the first few minutes of the interview is very crucial for the participants to stay calm, and will have a major impact on how the rest of the study will be.

While interacting with the participant, I learned it's so important to remind the participant to think out loud so we can hear and record their reaction to the product. Anothing thing I was always curious about before the training is knowing when and how to interrupt the participant if there is a need. I learned to keep interruptions to a minimum and that it's best because you want to let the participant to do each task at their own pace, and in their own way, and that we are just there to observe. The only times I found it necessary to interrupt the participant was to remind to think out loud and this need to ask a question or ask them to expand on something that is crucial to the goals of the study. I also learned in this process to observe actively during the study whether I'm the one conducting the study or I'm the one taking the notes. And to do that you have to first respect the user, and then be curious for opportunities to improve the design, and then keeping a hundred percent of my attention on the user, and to report all of the problems whether the problems are part of the design are not.

I'll pass it on to Shannon to talk about [analysis].

[Garbled overlapping presenters]

So we after we conducted all the sessions, they did all the analysis, consolidated the findings, identifying trends and recommendations, creating a findings summary, and presenting it to the team and posting it on GitHub, and then creating issues in GitHub for any agreed on changes and documenting items for future analysis. And I provided feedback on those as well.

This is an example of a consolidated spreadsheet where we track the number of participants [garbled] -- we track all of our notes in Google Docs -- an individual document per user and copy and paste things into a spreadsheet to track the number of people that are encountering something. So I taught them how to track those, grouping them and categorizing them to figure out what things that are bubbling up as trends, and then putting recommendations in. Then they took that and turned it into the findings presentation where we put screenshots and findings and recommendations that go with it. They turned it into the findings summary on GitHub, which is more of a tech space, because we put everything in markdown so we don't have a lot of screenshots, except for we do put it in our user type triangle. So every participant we stick on those triangles to make sure we know who we are talking to and we ended up making adjustments to those user types as time goes on and we see that they are all clustering where we didn't think they would. This is an example of the one they found on there, posted on GitHub.

And Maroya will talk about what she learned from the analysis.

I learned that the best way to summarize findings is by organizing them by importance of problem. And to do that, I looked at the scope and severity of the problem. By the scope, I mean how widespread is the problem and by severity, I mean how critical is the problem? After we consolidated all the findings we presented to the team our recommendations and design solutions to the problem.

I will talk now about the outcomes that came out of this pure training. We actually wrote a blog post about this training process and this is a quote that was in the blog post that came from me, and I just wanted to highlight how the outcomes of this training process not only helped me understand the complexity behind usability testing, but it also gave me a method and tools to approach any type of future projects.

An outcome that came out of this is greater team engagement. When our teammates were playing the role of users, they were forced to look at the prototypes from a different perspective and in more detail than they had previously. It allowed the team members to think about how people might use the design in the real world and give empathy for them. Usually it's difficult to give feedback of the design when you are reviewing out of context of use. Having team members pretend to be users helped them feel this empathy for users and to look at the designs more detailed than they would in a standard design review.

Another outcome that came from this pure training is more process documentation. Like Shannon mentioned, this process was not documented before, so the training forced us to document our usability testing process very well, so in the future, if Shannon wants to train anyone else, it's going to be very easy for her to do that. It also made us think about improving documentation processes like maybe exploring the user spreadsheet instead of documents to take notes in order to cut out some of the work of copying and pasting from multiple docs to a consolidated spreadsheet and doing that in Office.

Another outcome was a change in the mindset. This training process allows me and other program analysts to understand the complexity and gain an appreciation of the process and realize how initial planning makes the process move smoothly and how good documentation is necessary for sharing the results in finding opportunities for improvement. And by involving team members helps incorporate different points of view. Overall, I realize that there is a lot of work done behind the scenes before the interviews are conducted and I gained a very deep understanding of each step and the importance behind it.

What's next for us is that the other program analysts and I are actually planning on conducting a real study with real users that we will be interviewing. Also we are working on introducing this user-centered design to other teams in our agency that can benefit from user feedback. And by interacting with other teams in our agency, this is going to help us build bridges with other teams and hopefully get them to participate in our studies as well.

All right. So, any questions?

[Question off-mic]

The question is: How do you balance getting the qualitative data and then steering towards getting the answers you want to be able to answer “this many people did this task.” Is that correct? It's a fine line. We tend to structure such that we get a lot of qualitative information up front about how they use the site and how they use the data. Then we steer it towards more focused tasks later in the study when we get to looking at the prototype; and then, if they're not going to where you want to go you can stop them and say can you do a specific task that will get you there or you can probe into it if they are sitting there not talking out loud, you can say what are you thinking about and you can probe into some of the questions you have.

[Question off-mic]

The question is: Do we do separate training for moderating versus notetaking? So all of our teammates were already taking notes because we have one researcher and we need to have somebody taking notes while we do it. And 18F had actually really well documented the process for that, so it was there when I got there.

Maroya, you joined the team and learned how to take notes. Do you want to talk about how you learned how to do that?

As Shannon said, I looked at the documents that 18F had and when taking notes I learned have to be very observant and write down everything exactly as a participant is saying even sometimes recording them to the word so we know exactly how they feel. Basically being very observant in writing down every detail and where they are navigating from step-by-step to understand why their reaction that they’re receiving if they navigated the right way or not. So, just being very detailed.

Maroya is a really good notetaker, and that was part of why I was thinking I should be good at facilitating because she was taking really good notes.

Any other questions?

[Question off-mic]

The question is: How do we come up with the questions that we ask and whether it’s based on requirements or acceptance criteria? We don't really have a lot of detailed requirements because we are working on Agile it's mostly a very high-level issue that gets inserted into GitHub. But we’ll define the goals of the design and we’ll start with that and then base the tasks off of looking at what pieces of the design we want to get questions answered about, or if we know there’s some contentious point in our design reviews internally, we’re not really sure about, we’ll base it off of that. It’s kind of an ad hoc approach because we don’t do a lot of requirements documentation.

[Additional question off-mic]

Yes, so the question is: Is there a lot of back-and-forth getting approvals on the questions? And, yes, there is a little bit. It's mostly between the person running the study and the product owner. I wish that we had more team members involved in reviewing it. It would probably end up with less questions later. My teammates are sitting over there laughing.

Any other questions?

[Question off-mic]

Yeah. We tend to mostly have it at the screen level, if we’re looking at the design and the prototype, in the analysis we will do screenshots of what we looked at. We have done some -- I don’t have it here and I don’t know if I can get to it. Is this on the web?

Can you repeat the question?

Yeah, so the question is: Have we looked at the whole process; what does the feedback look like mapping it, like a process? So, we were looking at adding a new feature to our site for [indiscernible] level data. We did do a journey map of that because it is a completely new data set on our site and we didn’t know how people were going to use it.

Is this going to be shared?

So this is one example where we did because we were starting from scratch on this data set.

Here's one -- you’re probably not going to be able to see it well -- because it's giant map of how it's not being shared, or not presented.

Technology is fun. Did I lose the browser?

Is it being shared online? Maroya, can you see the journey map?

No, I can’t.

We have a journey map up that shows the main path users go through and then all of those comment things out there are pain points. That just got way blow up because there's 14 systems involved in seven agencies. This is a worst-case scenario, but we took a lot of feedback from the user areas and layered it into here so we knew what people were using it for and where they were going to have pain points and where the data was coming from to put on the site. Depending on the needs of the particular study that we're doing, we end up with different artifacts from those studies. This is available on our website and our blog and you can go look at it in more detail if you want to.

And you had another question?

[Question off-mic]

We're still playing with that. We've been taking them in Google Docs and just an individual doc per user and we would start with headings for each section and for each question. And that tends to work better for while you're taking the notes and making sure you're capturing everything.

We have played with one study doing it as a spreadsheet where you then had a row for each one and it wasn't as natural to take the notes during, so we've abandoned that for now but we may revisit it later. It's a balancing act to figure out what the best approach is.

[Question off-mic]

And then we all go through the document and make sure we all agree with what was said. After that is when you pull them. We're just looking at that one participant because we often have a different notetaker and observer for every session, so it's not the same people doing all of it who've seen all of it doing the consolidating. We don't record them.

Any other questions?

[Question off-mic]

We haven't yet because we tend to have different notetakers. The question is: Do we have any shorthand that we do in our notetaking? We haven't really to date because we have different people taking notes for every session. But we will if there are certain things we want to check off that we want to make sure whether we know somebody did this or not. We'll put it in there as a bullet and people can say yes or no. That kind of thing.

We have five minutes left. Any other questions?

[Question off-mic]

So the virtual folks can't see the journey map. Pointing out, there's a lot of callouts on there and there are pain points on this journey. It was an artifact that came out of user interviews and talking with stakeholders because of course the users didn't know all those systems. That came after the fact.

[Question off-mic]

The question was: If you want to get greater adoption of user research across the organization, where to start? I think it would be -- the best place to start is the people who want to do it. Getting them involved. So either if someone has a product they want tested or if somebody just wants to do it that has the skills and wants to do it, getting them to do it on something they work on -- that's the biggest thing of having someone motivated to do it and then letting them observe what you are already doing and then building up the skills from there.

Any other questions?

[Question off-mic]

Yeah, so they are going to be doing a usability study for our GIS team, which one of them used to work on that team, so that's how we got the inroad there -- which they do mapping of our data for internal users. So they something they said they wanted to test and we want data from them and so it's an even exchange. So it's kind of just figuring out where we can get inroads and where there's relationships that we can build -- either have or can build.

[Question off-mic]

The question is, like, where do you draw the line of what you teach versus what you have them do themselves? Is that right? Ok. Right. That's what we had them learn by doing so we can kind of figure out where that line was. It's going to vary based on the person what skill set they're coming in with, what they've done before.

You know, taking notes is a good first step, and observing studies, and then maybe having them write a plan. Then there's kind of baby steps you can take as you get through it. Then the next step, if they haven't conducted their own study on their own, but I think they will be this week, we'll have them conduct a study on our site first, and then they'll go study on someone else's site. It's looking to a natural progression, depending on what skills they are developing.

[Question off-mic]

If we ever do any of that. So the question is: Are we going to train on other methods? So far we have only been doing user interviews; we haven't done any card sorting or anything because we haven't had a need for it. As those needs arise, absolutely.

[Question off-mic]

So the question is about the synthesis of the data with the team. We haven't because up until now, I was the only one observing all the sessions. I really believe you have to observe all or most of the sessions to be able to do good synthesis. So, now, as they start getting involved, we may do more of a team-based synthesis as more people are involved and with more participants.

[Question off-mic]

The question is: If you don't have a dedicated notetaker, is there a software or dictation software you can use? I have never tried that. Has anyone in the audience tried that? Oh, somebody has. Someone in the audience says there’s a company called Sonia, which is media intelligence, that is AI-based. Someone else has used Otter, which is an app. That has sketchy results.

Okay. We are out of time. Thank you so much.