00:24	**Hey, this is <redacted>**
00:29	**How are you?**
	I'm good, thanks.
	Well, thank you so much for agreeing to do this interview. I really appreciate it.
	Hey, no worries.
	OK, so I'm just going to start off with a couple of getting to know you type questions. So what is your current position, you're faculty?
	No, I am adjunct faculty at <redacted>, but I actually work for <redacted>.
	OK. OK.
00:59	**And so can you tell me a little bit about your background?**
	I am a veterinarian. I graduated from <redacted> here in <redacted> in <redacted>. And then I practiced in mixed animal practice. And then I started to have some neurological problems with my arm and I came back and did a PhD in epidemiology.
	OK, well, I'm so sorry to hear about your…
	No, no, no, that's OK.
01:28	**OK, so what kind of like generally what kind of research do you do?**
	Most of the work that I do is related to antimicrobial resistance because I, I the <redacted>, the division that I work for is there. They're <redacted>. So most of my most of my research is related to antimicrobial resistance, particularly from farm animals.
02:02	So I do a lot of on farm sampling and things like that. OK, so and some of so I apologize for some of these questions. I just think a little bit repetitive. I just want to make sure that I am covering all of my bases.
	So what would you say the goal is of your work?
02:27	I guess the goal of the work would be to try and mitigate or to try and understand the epidemiology so that we can mitigate resistance development.
	OK, so I'm going to ask you a few questions about collaboration on projects. So on average, how many researchers are on the project that you work on?
	Well, that's a tough one.
02:57	It can vary quite a lot on a day to day basis. I work with two to four, four or five different people within my organization. But then when I'm working on these multi collaborative groups like I was doing with <redacted> and <redacted> and things like that, boy, it can be like 10 or 20 to 20 people that are involved depending upon the project.
03:31	**OK, so I mean, these are kind of general questions, drew it down a little bit. But in general, what are the roles that you and your collaborators are playing in these kind of projects?**
	Often I am involved with, oh, that's a tough one, how to define a role. So quite often it's in the planning and development of the project.
04:01	So that would be one aspect of it. So coming together and actually coming up with the idea and planning it and getting funding, and then once you get the funding, you can execute it. And then once the projects and in place and it's rolling, then often or our next role comes in with the analyzing and summarizing the data so that it can be published.
	OK, so when are you working on coming up coming up with these projects and getting funding, et cetera, what is what would you say your role is?
04:34	It depends on the project. It'll vary a bit sometimes. I am the principal investigator where I'm actually the one that's writing the grant and providing doing all the main work in trying to get the

funding. And then I'm calling on other people to sort of help fill in the gaps where my expertise isn't.

05:02	And then in other cases, I like a co-op account or a supporting person, and I am trying to help fill in some gaps where the principal investigator may be lacking. So maybe their specialty is more and survey design or something, but they want to do something in antimicrobial resistance. They use me for the antimicrobial. Resistance aspect of it, OK, and then when you're doing the working on analysis with collaborators, same sort of thing, the analysis can vary quite a bit depending upon the project.
05:35	Quite often it's working with students and getting the students to do the analysis and sort of helping and supporting them in developing their education and an understanding of how to approach these types of data.

OK, so if you're going to see a current research project like the AAMA project that you're working with Colorado State, you kind of mentioned this, that there's about 20 collaborators on this project.

06:08	Yeah, there would probably be on the metagenomics one. There would be at least. Yeah. OK. And so what would you say your role is in this project? I have two sort of roles in this project. Part of my role in that particular one is, is that they were looking to using a lot of isolette or samples from previous project that I was the principal investigator on and their samples and I switched from <redacted>.
06:40	And so they were wanting to test those using their metagenomics techniques. And so they're incorporated into the project just from that aspect of it, because they'll be utilizing some of the samples and isolates that we had collected from the previous project. And there's others that are also on the project, the genomics project that we're involved in the previous project.
07:03	So my goal there is to sort of help facilitate the inclusion of those isolates and then any sort of support that we can give to providing sort of context around those isolates would also be of value. And then I also sit sort of they have an advisory group as well that sort of meets occasionally to discuss sort of the path forward and where things are and things along those lines.
07:36	And so I'm also a part of that advisory group.

OK. OK, thank you. So. Kind of moving away from that group of questions, as you just like a few about working a little bit more about your projects in general, so he could give a rough estimate of what percentage of your projects have involved at least one collaborator that was at another institution?

08:08	I would say almost 100 percent of my projects involve at least one collaborator from another institution.

OK, and why is that?

Because as a part of my role with in the public health agency, <redacted>, they really try and encourage us as much as possible to work with researchers both within and outside of Canada internationally and develop those networks and connections because they feel that that's important in order to make the most of the resources that we have.

08:44	There's limited resources and we're all sort of working towards the same end game often. So if you can get together with like minded people, then you can really have much better benefit from that.

OK, so how do you choose the collaborators and other institutions that you want to work with?

Often it's through meeting them through either other collaborators that I've already worked with and then I get introduced to them. So for example, like <redacted>

09:13	in your situation, \<redacted>, I didn't know \<redacted> before, but I knew \<redacted> and \<redacted> introduced me to \<redacted>. So now he and I are collaborating on this project as well as, you know, a multitude of other people. So quite often it's from previous people working with these individuals in previous projects or that they know of them.
09:37	And then that's how we sort of end up getting new collaborators developed, is that you kind of get a network that gets going in and you meet people who are working in the same area as you through that network and provides opportunities for you to potentially work with them.

OK. So when you're when you're working with people, other institutions, I mean, this is going to sound weird, but what would you see?

10:07	**Like if you could make a general statement on the roles that your collaborators are playing or see, like how vital their roles are?**

I think that also varies from collaboration to collaboration. There's sometimes like, for example, I have some collaborations with some people out at the \<redacted> and at the vet college there.

10:34	And I'm on one project with them and their role is relatively minor. So they're sort of they're more as a supportive person, providing some expertise, maybe giving some input on some of the papers cetera. And then I'm with them on another project and they're the principal investigator. So it can really change dramatically from particular project to particular project. Right.
11:01	**So in your first example, you're relying on these researchers to be able to provide specific expertise that you can't get.**

Yes.

Somewhere else, OK?

Yes. Yeah, that would be correct.

OK. So what would you say? Are there what are the are there any disadvantages or problems associated with working in these distributed projects?

I think it depends who you're working with.

11:30	I've been very, very fortunate with the groups of people that I've managed to collaborate with. For the most part, I've always felt that it was a very inclusive sort of environment. People were very aware of the sensitivities sometimes around doing these types of research projects because, well, I can end up happening is that if people have similar sorts of interests, obviously they may end up wanting to have a piece of that project as their own.
12:01	And somebody else may also want that piece of that project for them to work on and things. And so sometimes you have to sort of be aware of the fact that both the sharing of the data and the sharing of the information so that everybody gets an equal opportunity to have a piece of the of the project that there is and that is relevant to them and that works for them and for those pieces that overlap each other to make sure that you're as inclusive as possible.
12:29	And so that can definitely be a challenge when you're working with large groups of people sometimes. But I've been fortunate for the most part not to have to run into some of those challenges in those situations. But that can definitely be one of those. There was areas that things can go awry.

Mm hmm. So you've said that you've been very cautious about that kind of thing. Have you experienced it a little bit?

12:56	Yeah, I've experienced it a little bit, but I'm tending to work with some of the same people again and again. It's because I found that they are good, first, and that we work well together and we really respect each other's thoughts and opinions and each other's sort of areas. And so I think that I've gotten away from that a little bit because I've been doing this for a long enough now

that I kind of know who I want to work with and who I like to work with and who works well, that's great.

13:26   And so when you're working with other collaborators, too, and so, you know, quite often you end up working with people that you can, you know, you can kind of deal with and work with. And then when they introduce you to new people to work with, quite often those people are also similar of similar mind. And so then that helps facilitate those ongoing relationships.

OK, you've mentioned a few benefits to working in these projects.

13:55   **Is there anything else that you can get bigger projects?**

So that you can get larger sums of money and you can also potentially have a project that spans a broader scope because you may have somebody that's, you know, in the micro end and then somebody that's doing epidemiology and somebody else that's doing social sciences or economics or whatever the case may be.

14:22   And so you get a lot of different people that with different ideas that come together, they might help you see it from a different perspective and give you some new insight into it. But it also helps round out the entire project in the approach so that it makes it hopefully more meaningful as an entire package than if each one of us was doing our own little area on our own.

OK, so you mentioned that you seem like pretty much all of your projects require had a collaborator at another institution.

14:55   **Were there any that were just co-located?** Yeah. You see, most of them are really not just co-located. Most of them are actually involving other institutions. It's just the nature of my particular position. So I would say no.

15:24   **Well, what percentage would you say of your projects have involved collaboration with researchers that are in different fields?**

Like, so what would you classify as different fields like microbiology and epidemiology would be classified as two different fields.

I would argue something. I mean, microbiology and say statistics or.

15:55   OK, well, if a part of he's got some statistics in it or something like epidemiology and computers or computer science or economics or something like that. Yeah, something like that. Trying to. Oh gosh, that's a hard one to put a number on. I'm just trying to think, because quite often there is always an aspect.

16:27   Yeah, I don't know, maybe like Cross, I don't know, maybe 50 percent, OK, it can be rough. I'm just trying to basically distinguish between someone who say says, you know, 10 percent, you know, versus, you know, one hundred percent. Right. The big difference is OK. Yeah, no, I would say maybe 50. I think that there's lots of opportunity to cross over with people that have, you know, different backgrounds and expertise.

16:58   I quite I work very regularly with a computer programmer and stuff like that. So. So are there any when you're working on these projects where there's kind of a crossover, are there any disadvantages or language is sometimes a challenge like what I use for as for terminology, the same terms may be used differently within their sphere.

17:26   And so sometimes that can be a real challenge in trying to understand each other.

Can you give me a quick example?

Um, let me think. What would be a good example? Um. Nothing that I can think of off top of my head, I'm just trying to think of, you know, like if I say something significant or there's a significant difference, I mean, statistically, there's a significant difference where somebody else might say there's a significant difference without applying any statistics to it.

18:00	And so that sort of language maybe be different. There's probably better examples of that. But what I can come up with off the top of my head, that's fine.
	I was just curious, what would you say were the benefits of working on these kind of projects?
	just because it allows you some more insight into other realms and gives you some ideas for potentially expanding your knowledge base and making use of other people's expertise and trying to find a solution to whatever it is that you happen to be researching.
18:37	**OK, so on the on the flipside, what about when working on projects where all of your collaborators are in the same or very, very similar fields, what would you say there are any disadvantages or problems associated with that?**
	Well, I guess sometimes if we're all we're all sort of coming from the same place, maybe the biggest disadvantages is that we don't necessarily think of it outside of our area of expertise. And so we're not really understanding it maybe from the whole, you know, big picture.
19:10	Part of things we're just looking at one piece of it. So maybe that would be a disadvantage instead of trying to get a broader a broader picture.
	OK, what about benefits?
	Well, when you're working with us, that would be also on the flip side, right, is that sometimes you just looking at one piece of it and sometimes that's all you need to look at to try and get your answer right. So you're just looking really specifically at something from that specific point of view. OK.
19:37	**OK, so we're going to kind of move away from this type of questions and get into kind of a different track with this interview. So as I've been talking to you, you've mentioned a few tasks that or roles that happen when you're working on these projects that can involve other people, things like sharing data or reviewing papers before submitting them to journals.**
20:07	**Is there are there any other, like tasks that in your in your research that involve working with another collaborator?**
	Say that again.
	Yeah. So I'm trying to build up a list of tasks that you routinely do that involve another researcher. So things like sharing data.
20:32	Well, that's I guess there's always you always have data sharing agreements that you have to have in place. And so that's always a standard sort of thing that needs to be performed. So you need to have an understanding and how you're going to share the data and who's going to use it where, when and how. And so that would be something that I always have to make sure is looked after working for the government. So that would be a part of it.
21:01	I am always on the analysis and I'm sort of looking at the data from an analytical point of view and how to analyze it and what we need to do with it as far as presenting it. And I'm also always usually well, usually my role is in design as well as the part of being an epidemiologist.
21:29	**OK, um, so starting with sharing data, how do you build understanding with your collaborators on what protocols you're going to use?**
	So quite often it's dictated to us somewhat by the organization that we work with. So often the legal department at the universities will have some sort of data sharing agreements that they'll have in place and then they share them with us at the public health agency.
21:59	And then we come to an agreement on how we're what the exact wording is going to be for the data sharing.
	OK, so are these when you when coming to an agreement, is this like an in-person meeting or.
	It's usually it's usually a formal written document. And there might be some discussion prior to that about, you know, what we agree to and what we don't agree to.

22:23	But quite often there at the end of the day, there is a formal written document that stipulates that, you know, these are the data that we're going to share and this is likely how they're going to be used, et cetera, et cetera. So those documents are or maybe a little less detailed than what you would have with in-person meetings. So you have the broader over document saying, OK, we're going to we agree that we're going to share these data and this is how the data flow is going to work and our understanding and that everybody's in agreement with that.
22:55	And then you have the in-person or the teleconference discussions about the nitty gritty parts of it. So breaking it down into much more detail as to who's going to do what and when those things are going to happen.

OK, so when you're creating the formal document, is one person writing it or is it usually?

Like I said, from the legal departments within the universities and those are shared with the departments within the with for myself, within the government that deal with intellectual property.

23:31	And then there just has to be agreement between the two legal departments in <redacted> between the two organizations to make sure that it's clear what everybody is agreeing to do and that they have the authority to do that. Right.

So is this the point where people start to discuss in person or teleconference?

Sure, yeah. They would discuss that.

23:55	And like I say, quite often, those agreements are sort of a 10000 foot view and then the actual working part of it, you know, that I'm going to write a paper on this or I'm going to analyze the data from this, or I'm going to, you know, make sure that the assets are tested for, you know, the with these tests that is much more specific and is usually just from the informal group discussion.
24:27	OK, so this group is, say, the researchers who are working on the project or are saying, yes, now the group that is the research. Just working on a project, OK?

And so you mentioned meeting in person for this and teleconferencing. Why when do you use which

I would say that almost 100 percent of my collaborations. Well, there's usually some component to both. Right.

24:57	So more often than not, most conversations are done through teleconference because we're usually quite dispersed. So there might be people, you know, out in <redacted>, there might be people down in the states like <redacted>, there might be people in <redacted> or <redacted>. And so there's people from all over the place that will make it very difficult for you to have routine in-person meetings.
25:24	So usually most of the stuff is done during via teleconference or web access or Skype or something along those lines. And then we often will try once a year or so to get into, you know, into a face to face type meeting. But it just depends upon the budget and what's available. So and also on the project. So that's the challenge, is that quite often these things have to be done by distance.
25:54	**OK, are there so you mentioned, would you say are the main disadvantages or advantages to teleconferencing or meeting in person?**

I think that the disadvantages to teleconferencing is that it you're not as engaged, I think often on the phone as you are when you're in person, you're not as focused. You might be multitasking and distracted.

26:17	And so if it's something that's not specific to you at that point in time, you're more likely to be sort of unaware or we're distracted by something else that's going on. So that would be a big challenge. And it's also difficult sometimes to, when you're on a teleconference, particularly, get

a read for the people in the room as to sort of what the atmosphere is or how they're feeling or what their sort of processes are.

26:47 Whereas if you're in the room with them, you can read body language and facial expressions and those sorts of things. So that makes it a little more challenging as well to try and just get a good feel for where people are coming from. And so those dynamics, those interpersonal sort of dynamics are missing. And so that's difficult. And then quite often, if you're meeting with people in person, you get the opportunity to have one on one conversations with people without the entire group hearing what you're saying.

27:20 And you can't really do that very easily over a teleconference. You'd have to table it and have a separate conversation with them at a separate time, which may not matter. And sometimes that can be challenging as well.

So are tools you use Skype and WebEx– what technology are you using to talk to teleconference?

So quite often it's just I'm just telephone teleconferencing and discussions and things.

27:52 If we feel that there's a need for having some sort of interface where we can, you know, see presentations or working documents, you know, anything along those lines. So I've used I've used Adobe there's an Adobe version of that with one project. I've used the blue jeans from <redacted>. I've used the WebEx version. I've used what else?

28:22 I'm trying to think those are probably the main ones that I've used. There is another one a long time ago that I used, but I can't remember the name of it.

What about Skype?

I don't I'm not a big Skype. I find the thing with Skype that frustrates me about Skype is that quite often the voice part of it is not very good. It kind of cuts in and out and is maybe a little slow with the video feed and things. So I'm just not a big Skyper. It's not my thing.

28:53 **OK, so you mentioned that you mostly will use the telephone for conferencing. What are the benefits of using the using the telephone or what do you choose to use telephone over alternative?**

I think that it's always consistent and so it always works.

Right.

So I can be guaranteed that regardless of what happens, my telephone will work.

29:17 I can't always guarantee that WebEx is going to work and that we're not going to have linking issues or that, you know, you're not going to have issues with Skype or even blue jeans or whatever, like some of the more complex technologies they can go wrong. And especially if you start to get. A lot of people on them, they have had challenges with, you know, people not being able to hear you when you're talking, you know, just, you know, microphone issues, compatibility with your computer issues, all that sort of stuff.

29:49 That's the challenge.

OK, so, um. So I'm just writing a little note to myself. OK. So do you do you typically use the telephone with all of your collaborators or just some of them?

I use the telephone with all of my collaborators, but I also, like I say, just depending upon the meeting and stuff, we will do Internet connection as well.

30:19 But definitely I have used the telephone with all of my collaborators in the past.

OK, but when you're doing these meetings where you're doing a Web connection, is that kind of like a like an everybody's there kind of meeting or just?

Yes, often that's the way it is, is that it's an avenue. But sometimes it's just a one on one.

30:45	And sometimes I need to be able to see some data that they're working on or some information that they're working on and that we need to be able to discuss it as we look at the information together. And so even sometimes it'll be one or two people out of the group that are having these discussions and they'll be actually doing an Internet connection of some fashion so that we can actually look at the same thing at the same time and make sure that we're all understanding each other.

31:11	**OK, when you're doing these kind of one on one interactions using, you know, Web connection tool, do you ever choose to use one over another for a specific collaborator?**
	Mm. Yes. I guess that's probably sometimes it's a matter of what they can access and what works for them.

31:37	I tend to use WebEx more than anything, and that's just because that's what we use within \<redacted\>. And so that tends to be my go to thing. But quite often if I'm dealing with other people, you know, from other organizations or whatever, they have their own either internal university, one that they use or they have their own personal one that they like to use.

32:05	And so it can vary with the collaborators**.**
	Just real quick, what do you mean by having access to the specific tool?
	Like, I think that the blue jeans well, maybe I'm confused by this, but I thought the blue jeans was like us, like more specific to \<redacted\> than it is to some of the others. And then there is another program that we used at a \<redacted\> for a different project that was only you're only able to access that was actually through \<redacted\>.

32:38	**So there is like university specific programs that you had to be invited and included in their meeting invitation in order to be able to even access them. OK, so then when you're doing you're doing your analysis, it's kind of a break. Break that up into some portions.**

33:06	**So, I mean, you're doing analysis. You're working with other you're working with collaborators in that. Can you kind of break that down into some smaller steps or portions, like breaking it down?**
	How do you mean?
	Well, it's just because I mean, I'm not I'm not an expert in this.

33:33	**So it seems to me so, though now analysis can include a lot of tasks and depending on the tasks, the way that you communicate or collaborate and maybe be different or I mean or maybe you're just doing analysis yourself and then it's at the end you're presenting or discussing your results with math.**

34:02	Quite often how it goes is that there will be aspects of it that you'll be responsible for summarizing and presenting to the rest of the group. And you kind of like I say previously, have your arrangement or agreement as to who's going to do what and then you'll go from there.
	OK, so when you're when you're presenting, can you see what kind of what kind of tools are you using or how is this presentation sort of conversation going?

34:38	Um, sometimes it can be via PowerPoint that you'll do your presentation and you just do a summary sort of formal type presentation. Other times it's you may have shared a document or some output or. Something like that from your programming or your even your syntax or whatever, and you make sure that and have some, you know, just discussion about those things and just go through those documents.

35:11	Even just as you're going over the phone, you can just see, well, if you look under section two, you can see that I put, you know, X, Y or Z. And, you know, I'd like your input on this or I you know, this is how I've interpreted this or whatever the case may be. And other times, like I say, if you're actually connecting more over and above, just being on the telephone and you have an

actual interface between the two of you, you can show those documents on the interface or you can do a formal like PowerPoint presentation as well.

35:42   **OK, so starting with when you give a PowerPoint presentation, is this with, say, one or two collaborators or with a large group?**

Usually it's the larger group that we do PowerPoint for, unless it's you know, unless we're preparing for a different meeting with, you know, some external stakeholders or something like that. And then maybe we'll go through the PowerPoint together and have a discussion about how we want to present things or what's going to be included or not going to be included in a particular PowerPoint.

36:14   But more often than not, within the group, if you're doing a PowerPoint presentation, it's usually for the group as a whole, not just one or two people.

OK, and just a quick curiosity. Why PowerPoint over another presentation tool?

What other presentation tool are you thinking?

Well, I mean, basically, I've seen people use a PDA. Just use Adobe Reader with a PDF or.

Oh, yeah, I've done that to you. Yeah, OK.

36:44   And there's also open source versions, I guess, of PowerPoint. And there were presentation platforms. Yeah, I haven't used any of those PowerPoint I think I go to just because it's what I know and it's what I have on my computer and so it's easy to use.

OK, so it's, it's nice and available.

It's available. Yeah.

Have you ever had any problems with PowerPoint.

Yeah. No I haven't.

37:15   I have seen though when I've gone to some conferences and things like that, if people are going between versions of PowerPoint that they've had issues with formatting. But me personally, I've never run into that.

OK. So when you're sharing documents or program output, what kind of kind of tool or how are you sharing that?

Sometimes it's just a Word document.

37:41   Sometimes it's a PDF it and send it as a PDF. Those would probably be the most common. So are you ways that I would send them an Excel file sometimes?

OK, are you sending them like with email?

Yeah, usually.

OK, you ever use anything like Dropbox?

Yes, I have used Dropbox. I have Dropbox and have I don't use it routinely unless it's for big files and things like that, but I have used it.

OK.

38:13   So I guess I mean sort to say this when we would to use email over Dropbox, depends how big the files are getting to be. If the files are going to be really big, there's often limits on your email as to how big of a file you can send. So it depends somewhat on the size of the file.

Right.

But the people that I'm working with, some of them are not Dropbox users and aren't comfortable, you know, taking an approach that way.

38:42   OK, so we'll use email.

Yeah. OK, yeah. So have you see you kind of mentioned that some of your some of your collaborators don't use Dropbox. So do you see Dropbox or you use Dropbox or email with some collaborators but not all.

That's correct.

Right. OK, and have you had any problems using email to send files or using Dropbox to share files.

39:15   Oh yeah. The email is primarily the challenges is that the file sizes get too big. And so then you have the split stuff up and send it, you know, in separate emails and things. So. So that's the challenge.

Right. Right. So when you're using email to share documents with collaborators, is this something you're sharing with the whole group or just with a few people?

Yeah. Yeah, but there are they're both. So sometimes it's for the entire group and sometimes it's just for a subgroup of us that are working on a particular aspect of the project.

39:47   **OK, is there any difference in challenges when sending it to like a smaller group versus sending it to everyone?**

Um, I guess that the challenge is with a larger group is that sometimes there's different settings on firewalls and things like that and the size of files that can be sent and so on. So then you get bounced back and it gets to be more difficult.

40:17   But that would be the biggest issue, I think.

OK. And then when you're discussing these files that you're sharing, what typically is for that you mean when we're actually in the meeting having a conversation?

Yeah. Let's see you use it on an email to collaborators with these documents or output.

40:44   **How do you decide what tool to use to discuss this, or are you calling you?**

Yeah, we're usually on the phone or like I say, sometimes we'll use some sort of Internet connection so we can actually both see they can see my screen or I can see their screen. We can share, you know, viewing privileges back and forth.

Do you ever have to change your privileges, I should say?

Yeah.

Do you ever do the discussion over email or do you just sometimes?

41:16   Yeah. Yeah. No, I'm sorry. I didn't realize that you were maybe getting at that know for sure. Sometimes it's just an email back and forth or you know, you'll read the document and review it and add in comments or questions or thoughts or whatever. But yeah, sometimes you'll do it that way as well.

OK, so we're talking about this. The three twill mean methods. And again, I apologize if this getting repetitive.

41:42   **So when would you choose to use email or talk over the phone or a some sort of screen share a web program to do?**

I guess if we're trying to make some decisions about where we want to go and how we want to do things, quite often it'll be more like a telephone call or a web communication if there's something that sort of needs to be discussed and worked out.

42:11   Whereas often and it's sort of a major concept idea, whereas the email, you might actually have something that you've already come to terms with, how you're going to deal with it, and it's just sort of getting written up. And so you might be adding in feedback on the information that's been provided, how it's been presented. And so you might just spend time doing that on your own and then writing comments throughout the document and then sending emails back and forth.

42:44	Or if there's something that's really quick and easy to answer, you might just do that through email rather than, you know, doing it through a telephone call or through WebEx or things like, OK, so it'll vary depending upon on what the circumstances are. So sometimes it's a quick and easy thing. You'll do it through email. And sometimes if it's like a manuscript that you want to go through and provide, you know, detailed edits and comments on, then you'll do that, you know, also through email, because you want to spend the time actually really focusing on the document yourself.

43:22 **OK, so what is the advantage to having those more seem more difficult conversations on the phone?**

Because of two things. I think if that particular email, there's no context. It's like sending text messages. People can read tone or attitude into the written word.

43:47 If it's not if you're not careful about how you phrase it or how you respond and sometimes even something as simple as a yes or no can be taken out of context. So you run the risk of potentially offending somebody or upsetting them. So if you're actually having a conversation with them, they can hear the tone and they can hear the input. And there's an opportunity for back and forth discussion.

Yeah, for sure.

44:16 **OK, so, um, so if you could come up with some hypothetical future technology to make collaborating easier, what, what would it be, what kind of features would it have?**

Something that's universal. Hmm. That is technically simple, reliable and inexpensive.

44:51 And I don't know. Um. That has opportunity for good interaction, I guess, in like engaging in interacting.

OK. OK, so I have only a couple of questions left for you, one of which I am I'm sorry, but I am required to ask this for when I report my demographics.

45:18 **How old are you?**

I'm 47.

OK, and then real quick, do you have. Do you know anybody that I could contact for coming up with additional participants, participants that are dealing with large groups and things?

Well, I think that you had been in contact with <redacted>

45:45 out of <redacted>. I think he was one of the people that <redacted> had suggested. And so then maybe some of the other people that you might talk to would be I can probably just send you a couple of email things. There's <redacted> out of <redacted> that's been involved in several of these sort of larger projects. And there is also <redacted>,

46:14 who's obviously been involved in this project. So, you know, somebody like that might be willing to participate, but I can send you their contact information.

I greatly appreciate that. So just to wrap this up, do you have any questions for me?

No, I don't think so. I read to the document that you sent and signed that and sent it back to you. So hopefully you've gotten that.

Yeah, I really appreciate it.

46:41 **It's just because really, I just it's really difficult for me to I mean, there's a few things I write down, but it's difficult to have like an hour long conversation and like, right after.**

Yeah, it limits your flow of your conversations. So for sure, makes it very challenging. Well, again, thank you so much.

I really appreciate.

You're welcome. Good luck with your project. I hope it's if it's successful.

Thanks. OK, take care.

Thanks. You too.

Thank you. Bye

Bye.