heard records for animal health dairies, so it's all dairy related.

So what is the goal of your research?

To publish lots of papers so nobody fires me

Yeah, okay, what about potential impact on? The food safety stuff as far as the goal of that is kind of coming through the back door to look at animal health.

We are looking at michrobiomus of the overall microbial mayloo within cattle from an infectious disease stand point, so using the O157 stand point we are using an organism that ultimately doesn't make cows sick, doesn't make cows sick at all. But the idea is to look at reasons why the cattle might shed the organism that might have influenced the animal's health. so we are looking at an organism that's sort of relevant to the animal, totally relevant to humans therefore funding is available, with the back door option to hopefully be too able to see why we get these changes in that microbiome that allow o157 to take over that ultimately might influence the overall production. For the animal health stuff, on the record research I am trying to develop a metric called zarydally. so the disability adjusts the life years in humans, we tweaked it, we call it the disease of justice lactation yield, and it's a WHO world health organization metric that they use across the world to try to establish time loss due to disease as an economic major. So its kind of a different way of looking at disease impacts because instead of looking purely looking at the economics of productive you actually look at the time that is loss. And then through that it comes out as economics. And so we are doing a similar major and I'm hoping this is going to become sort of a big deal from a wellbeing perspective. so instead of just focusing on loss production which is what we historically know on dairies, I want to look at that time loss as an estimate of a sort of wellbeing impact welfare would be another way of putting it, I don't really like that as so much, but more just the overall impact on animals life

[00:03:14] great, thank you. Some of these questions, just as a for warning they might sound a little goofy especially with what you said you have implied. I need to hear it coming from you because it makes my data stronger, right? So what are the, what role do you typically play in your research and the roles of your collaborators.

[00:03:39] good questions, so on the two projects I just described, I'm PI. So basically on the E.coli o157 is a derivative of work that I was involved in, in <redacted>. I used to work in <redacted>. I was in beef work and no one has recently asked the questions that we have asked on. So I kind of expanded the concept of what we were doing on dairies here. So my idea of was put on the back end of other peoples ideas. so PI driving that one, and the dairy dally again, just an idea of looking into literature and decided to continue with work that I did there on my PHD and PHD was focused on dead cows specifically and so trying to expand from sort of a finite aspect of losses into a greater aspect of losses, so driving both of those projects on my own with collaborators helping out. But then as for numerical amounts of, projects, so the number of projects that are involved in, honestly most of my job are getting is getting samples and helping out access to dairies, mostly stuff like that. In fact the meeting we just had with

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Paul was about how we are going to get out to your dairy to get specific manure samples, and that is my job. So a lot of my research contacts are through that. I have access to dairies that other people don't have, so how are we going to get onto them?

So in those two projects that you mentioned how many people are on them including graduate students or technicians?

[00:05:22] and for like the E.coli o157 we counted them up a few months ago for some records, and for undergrad help that we put through the animal health institute lab, it was like 15 people or so involved in that. Most of them were very peripheral, just helping with basic lab work. But still kind of cool. Because you get involved across campus in these remotes to microbiology undergrad students who want to get experience. Theirs a single grad student who is a PHD student who is now driving it basically, <redacted>

[00:05:58] Oh yeah, I have met her

[00:06:03] okay, so she is driving it for now which is great, she is doing a fantastic job. And outside of that really I mean, that is really the majority of people cause it's basically been maintained through the <redacted>, with the work itself. With the other project, I guess it kind of depends on how you classify people who are helping, <redacted> is leading from a master's perspective. <redacted> is a grad student who going to start today basically, she just flew in from chili. So she is going to take the project over, so their are a couple of grade students who are kind of leading charge on that. But we work with some dairies in Kansas, on the initial part of the project we will be working with our contract diaries here, we are just starting some collaborations with <redacted>.

<redacted>

<redacted> yup

[00:06:57] in fact what I need to work on this week is a grant that will hopefully pull everybody together for the continuation of the project, getting more access to records. So I mean, if the question is how many people on this campus its only a couple but if its across the states, then its a potential for a solid 10 people in multiple areas of the states

In general, how many people on average are on a project that you are working on

Like written into a grant proposal?

Not just, also the peripheral people who are helping out.

Totally depends on the project, right. so the E.coli on with all the lab work and all the bits and pieces, you are going to be looking at a minimum of sort of 10 because their are going to be people that are grad students helping out in the lab, so the minimum is 10. whereas the with the dairy dally one you know a lot of it can be done with two people plus committee members, so you are looking at a total of 5. But those peripheral groups that are going to be putting into it, expand that out to 10 plus. I would say an easy 10 for any given project. They play some substantial role, I guess

[00:08:20] say largest smallest, is the rage

[00:08:24] for my work? Currently or historically p;

Historically

[00:08:31] largest was the o157 work in <redacted> they included two institutions and multiple grad students. Looking at sort of 25 people. And the smallest would be 5 or less.

[00:08:46] are their any challenges or disadvantages associated with working on projects where theirs a small number of people?

[00:08:54] rephrase it, say again?

[00:08:54] are their any challenges or disadvantages or issues on working on research projects where you only have a small number of people on it

[00:09:09] yeah, the main problem is honestly funding because the world has changed as we know it and funding bodies look for people who have multiple collaborations and multiple disciplines so when you try to pull together something small the biggest issue you run into is people not believing you can get enough done without those multiple collaborators. on the other hand, if I sort of flip the question if I'm trying to get the pilot work done or just trying to get some background noise done, then to be honest to or three people is easier because you can just go get the job done, but you are defiantly limited in terms for outside influence and outside sort of I guess outside collaboration, beyond the people you work with because you don't have those context and certainly limited by the fact that you don't necessarily have multiple discipline representing you. So if you want a project that has a social science bent to it then you better get some social science into and if you want an epidemiologist, you better get an epidemiologist and statisticians, and yada da yada. So I guess that would be the main limitation. If you are only going into it with two or three people you are pretty much limited to what you know

[00:10:22] you mentioned at least one benefit, are there any additional benefits to working on those small groups

[00:10:30] yes, aside from being able to get in and get a project done. I guess I would tend to say that the smaller projects with few numbers of people are certainly less complex as well. So it's not just the fact that you can go get the project done, but it usually indicates that the project itself is fairly singular oriented and has linear sort of aspect to it and the idea is that you are going to do this, this, and this. and at the end you are going to have an outcome oppose to your going to do this, this, and this, all over the shop and try to pull all that together in some global accumulation information, so I guess its ease of data management and ease of actual data generation would be the main benefits.

[00:11:18] kind of along those lines are their any challenges or difficulties associated with working on really, with really large groups

[00:11:25] challenges? Absolutely. Yeah I mean the main challenge is the large group honestly. It's just keeping control of the project right? the move anymore is that if you are going to have huge projects then you basically have, I forget the term, but the project manager, theirs a specific term I believe they use besides project manager. And I can absolutely can see the benefit of that. I don't think if you move beyond a couple hundred thousand grants and start getting into million dollar grants, and you don't have project managers who that are helping over see that, at least in certain arena in that project. I just can't imagine how you can keep it cohesive. Too many people, too many dispersed notions, too many small parts to play. I find that to be a bit of challenge as well in some ways. Unless you are able to micromanage then you are sort of expecting people to play their very defined role and somebody has to bring all of that together

[00:12:25] and then you kind of touched on that a little bit. Can you elaborate on the benefits of working on, with the large groups

[00:12:35] yeah, I mean bottom line, yeah. If you put it in a nutshell the benefit of the large group is that you can have your very discrete roll and as a group you have this power of intellect and power and experience and opportunities that you simply can't pull together in a small group. Hands down the benefit is that you don't have to try to cover all the bases and that's huge. And honestly, that's why funding buddies are looking for that now, the world if a different place than it used to be and you can't know everything right? That's just impossible. And so I think, you're almost missing the boat if you're not think about where's my statistician, epidemiologist, my microbiologist, my population health specialist, my whatever within a project. Everybody kind of focuses on their area to pull the information together.

[00:13:24] so slightly different track, about what percentage of your project have involved at least one collaborator at another institution?

[00:13:34] let me think. At least 50 %

[00:13:45] Yeah I'm kind of going for a sometimes, always, never, type number there

[00:13:52] it's not always

[00:13:55] right, 50% is about right. So on those projects where you are working with collaborators at other institutions or, where did you choose to work with those collaborators?

[00:14:11] two reasons, one you can work with collaborators that have more experience and therefor more clout and that's big. Particularly when you are fairly new to the game, like I am. So that's one and the second reason is the same that we were just talking about for the larger projects, at the end of the day you can get people with different skill sets to bring into your project that you might not find in the realm, your own institution.

[00:14:38] how do you choose which collaborator to work with?

[00:14:44] this is going to sound a little flippant, in a way I don't, they kind of choose me because you present somewhere and your chatting about something with someone and the conversation leads into hey we got to work together, its almost not a choice as much as it is just sort of a natural flow. so yeah, most of the collaborations that I have, have either been work colleagues that have moved on and you continue to work with them, its natural and their anyways, or communications through colleges or through presentations at different conferences or whatever that give light to different collaborations.

[00:15:26] do you feel like familiarity or past experience with a collaborator impacts the outcome of your work?

[00:15:39] goof or bad?

[00:15:38] good or bad

[00:15:40] impacts the outcome of your, I'd have to want to say that lack of familiarity had been a benefit in some cases, maybe a bit of peripheral knowledge of what their strength were, but not necessarily how they work can sometimes be good because I don't think you can go into it with expectations is the wrong word, but you know, almost an anticipation of where the hang ups will be if you know somebody too much. I'm thinking of you know, we all sort of respond to these certain things based on our past experience right? So think of current collaborations, probably the most fluid one right now is with someone I have never worked with before, because you are sort of feeling each other out and you know the world is sort of an endless opportunity. Within that same project working with someone who you know fairly well theirs already sort of some barriers if you are not careful because you know what the expectations are for what they are going to do.

[00:16:48] are there any, this is like a similar question, are their any disadvantages or challenges to working on projects where your collaborators are not located at the same place as you?

[00:16:57] disadvantages or advantages?

[00:17:01] well I'm going to ask you about advantages after, so it can kind of go

[00:17:04] so yeah, disadvantages absolutely. Bottom line is that having personal contact, being able to have a morning meeting can be extremely helpful. I think you need a coffee.

[00:17:15] oh no, it's good. It's just you know, I have a deadline in like 5 weeks and so

[00:17:39] yeah, that world be the main thing honestly. If you can't just drop by somebody's office and have a quick chat or bump into somebody at another meeting, I find that happens all the time as well. You're not thinking about that, the project you are currently working on and then your in a meeting about something else and their in the room and suddenly you are having a conversation about the project that what have never normally happened. That lack of opportunity is huge. That is a big problem

[00:18:07] so you feel that colocation has an impact on the frequency of meetings?

[00:18:14] colocation being, being in the same place –

[00:18:16] yeah, being in the same place

[00:18:19] yeah, and honestly a lot of them are unplanned, they did I mean it certainly impacts meeting in the sense that it's easier to schedule on then, which is ironic because you would think that you would be able to make a quick phone call at that's the same concept. But that's not the same meeting because then you are really more one on one. Whereas colocation allows you to say hey lets three of us get together instead of lets pull three phone calls together. That conversation and the opportunity to read people is huge. The day they come up with, what's the word when you are virtually there, when they like, their is a word but I can't think of name of it. But you are actually there in virtual time so you can read people and have those conversations around that. That would be so beneficial, phones just don't cut it. Well skype allows that to some extent, but we don't tend to do it. its available, its there but you only make those phone calls when you have to instead of having a quick lets go grab a coffee and have that conversation

[00:19:26] when do you, when do you choose to use to make a phone call over having an in person meeting?

[00:19:34] honestly only when their are deadlines, for the most part. Deadlines or you know, just crucial questions where email can't give to you when you want stuff. Emails are clearly the way anyone goes anymore. But yeah, it's got to be sort of critical mass before those phone calls are made

[00:19:52] can you explain what you mean by, you make a phone call because their is a deadline, what

[00:20:00] say you are working on a proposal and you've got next week and it's got to get done, and you've and you know you are stumped on some particular area of the proposal and its coming up due. Normally I would email just deal with it that way, not worry about it. But if there's a deadline in place then the phone call has to come in

[00:20:21] versus an in person meeting

[00:20:24] oh well, colocation I would rather just drop by their office

[00:20:29] and you mentioned that sometimes you use skype because it is available, but it seems like you do not us it all that often, why is that?

[00:20:38] I don't know, I don't know if it's generational or not. I work with people who are probably more comfortable with the phone call in general. The only people I skype in general are <redacted> because phone calls are a nightmare, phone calls are a lot easier

[00:20:57] yeah, I just experienced that on Sunday

[00:20:58] yeah, did you

[00:20:59] yeah. Um so are there any issues, do you ever have any problems with skype?

[00:21:04] no, I have not ever tried to do multiple people in a skype. I think that would be you know, helpful at times. I have never tried that, that is something that works fairly well though, I guess. Have you done it?

[00:21:20] no, I believe you can do it with skype for business. I mean I did a skype call with multiple people once, but their was not video, it was basically like a conference call. Um so you mentioned using email to communicate with collaborators, is that both collocated or distributed?

[00:21:41] yeah, yeah for sure, it's both. As much as I can't stand email, because it puts elements on the receiver as oppose to the person who is sending the email. The reality is, that's the world we live in. the truth is it saves a lot of time then running over and just chatting with someone, because as you know when you sit down and chat with somebody you go through all the personal contact stuff as well, and you know you don't just get to the heart of it. With email you can just get to the heart of the question.

[00:22:07] have you ever had any, are there any disadvantages to using email or advantages, that you'll elaborate on advantages a little bit?

[00:22:14] I mean disadvantages are where you miss a lot of the nuances, right? Because you are not reading people, you're not getting to carry it on to the next/further aspects of the conversation, so you

are just asking singular questions and typically getting singular answers. The advantages are hands down, you can get questions answered quickly as opposed to going through the process of working around the issue as a whole. There is something lost in that.

[00:22:40] and just like on last question on that, have you ever had any problems using email for communication?

[00:22:50] I wouldn't say so. Not problems per say, I mean, if their was an issue it would be the turn around can be questionable. If you make a phone call, you drop by someone's off, or do a skype the question is answered. And that gets back to the whole deadline issue, so certainly their can be issues with turn around time.

[00:23:14] I'm going to kind of pull back to where we were before doing off about asking you about technology, are their any disadvantages or challenges to working on projects where all of your collaborators are collocated in the same place?

[00:23:32] the only one I can think of is access to additional, in my world, dairies say. If everybody is collocated then we are typically working on the dairies that we always work on. If you are working with people outside of that realm then we got opportunities for different environments, different structures, different ways of you know, management. that kind of stuff that we definitely missed out on when we were focused on an area as opposed to regional or international or whatever.

[00:24:06] Are their any benefits to working with people like just in the same institution?

[00:24:11] yeah, absolutely. Again meeting times are easier to structure. You'll run into a conversation in the hallway. You typically know the environment you are working in, and again in my world the dairies that we are working on, so sort of an understanding of what that will look like when you have these conversations without necessarily having to spell out all of the details. Yeah, so as much as anything it's the fact that relationships have been developed not only within yourself but also within the immediate area that you are working and that enhances opportunities

[00:24:43] so what percentage of your projects involves collaborators who are in different fields than yours

[00:24:50] different fields? You want percentage?

[00:24:55] yeah, rough.

[00:24:55] you're asking as a percentage? 25%

[00:24:58] so are their any disadvantages or challenges associated with working on projects where you have collaborators in different fields?

[00:25:12] yes, the major disadvantage is that their can be quite some time needed to be put into some sort of up front explanation from everybody's perspective of why things are going to get done the way they are going to get done. Instead of just having a mutual understanding of that foundational knowledge of why are we going to do things the way we are going to do things. That would be the main thing

[00:25:36] and then benefits

[00:25:37] benefits are that you get your eyes open to alternative ways to doing things that you haven't thought of or alternative issues you might have over looked. I think that's one of the biggest ones. its super easy to just get so linearly focused on what you need to get done, you can miss a lot of those peripheral things that can be really influential and usually working with people outside your own discipline will shed light on that.

[00:26:01] are there any challenges associated with working on groups where everybody is missing the same field as you?

[00:26:08] yeah, have you worked with vets much?

[00:26:11] I have interviewed vets, I don't really step outside of a computer type of thing, honestly. Not really

[00:26:25] in a very general sense vets are often times type A and also on the spectrum autism. They seem to sort of fluctuate on the high end of that spectrum sometimes. You will have a lot of people who have a very difficult time seeming outside of their own boundaries. So working within a discipline in my case of vets, it can be very challenging for people to accept somebody else's view point.

[00:26:52] and are their any benefits with working with people in the same field

[00:26:57] yeah again, and if I'm in you know, my experience working with vets and the benefits are that often times if a vet oriented type of person sort of puts though blinders on and puts their head down they will get the job done. They will get very singular focused on doing the work. So the benefit is that once it is established of what's getting done, in most cases it gets done fairly rapidly with fire and you know, well.

[00:27:24] um some kind of asked this question with regards to location but do you feel that frequency of meeting changes or is effected by the size of the group that you're in or the disciplines of the people who are in your group

[00:27:43] for sure, I don't now about discipline so much but certainly by the size. If size in sense, in a way large size in a colocation can almost be more of hindrance than a large size in multiple in situations, I find. Because large size in multiple institutions in some ways facilitates the meeting because you know you're going to have to do it via phone or some other option. I mean, honestly it's always phone, just conference calls. So people expect that. Large size in a collocated institution the expectation is that you are going to pull everybody together. And that means getting numerous people on one side at one time and that is the hardest thing to possibly do. It is much easier to get multiple people on a phone than it is to get multiple people in a room.

[00:28:30] so you mentioned that as kind of being an advantage of using a phone conferencing system, there any disadvantages?

[00:28:36] to the phone conferencing?

[00:28:37] yeah phone conferencing for meetings

[00:28:39] yeah, honestly phone conferences in my experience allow you to get very select things covered whereas meetings in person allow you to get multiple things covered. So that is a major disadvantage.

[00:28:56] have you ever had any issues trying to do a teleconference and something happened?

[00:28:58] um nope, I don't think so. They always seem to work okay, theirs just no way to get around the fact. It exaggerates the sort of leadership roles so in a meeting, 10 around a desk, you are always going to have a leader or two, with a dominate personality or two. But you still have the opportunity to look around the table and ask for input. and In a phone call it seems like the dominant personalities almost have to lead or silence sets in. in occasionally other people will step in but their is no way to really force that to happen, unless you have a really good leader who is going out of their way to say joe, sally, would you please, what is your input on this. And I find that doesn't happen a lot.

[00:29:48] it seems like that kind of personality really, like the impact that it has on the success of a meeting is very different based on like what kind of technology you are using or method you are using for the meeting

[00:30:03] oh yeah, I think that is fair to say. I think no matter what you are using a good facilitator can bring out the best in everybody. If you got good facilitators, a phone conference can still do amazing things, you can get everybody's input. if you don't have people who are skilled in that it is very easy to just sort of allow the conversation to develop organically and most of the time in my experience that leaves out some subset of people who aren't willing to necessarily to jump in. whereas in a room around a desk it is much more difficult to avoid that contact. Even if you are a quite type, the fact that you are

sitting across the table from people pretty much necessitates that somebody is going to call you out at some point for input

[00:30:45] have you ever had a project fail due to collaboration issues

[00:30:50] no not as of yet

[00:30:52] ah, lucky you. So which, who do you think has the biggest impact on the outcome of the project, the size of the group, the location or distribution of collaborators or the disciplines?

[00:31:10] good question, that's the best question you asked today. Size of the group, location, or disciplines. Most influential outcomes, is that what you said

[00:31:23] yeah

[00:31:25] I would have to go with, size.

[00:31:34] why?

[00:31:37] I think size, in my mind is the most dangerous because by virtue of size, you pretty much in most cases, dictated that you probably will have multiple disciplines and you will probably are going to have multiple locations and therefore you have created a scenario that's reliant on everybody's piece of the puzzle. And so if anyone of those pieces fails, then you are more likely to fail. Whereas a smaller group, collocated you can probably get around that. Again smaller group, different disciplines you can probably make sure to work together to get things done. It is pretty easy for some researchers to drop out of the mix in a large group and that can ultimately be, you know, a herald of death for the whole thing, right?

[00:32:28] I'm kind of moving into the last part of this interview. I have kind of been like jumping back in forth for a bit, so you mentioned a few things with regards to tasks or activities in your research that involve collaboration or working with another person. Mostly with generally conducting meetings, are their any tasks or activities that you do that involve working with others?

[00:33:00] besides meetings?

[00:33:01] besides meetings

[00:33:03] tasks or activities that involve working with others. when you say working with others do you mean in the general sense, or just like literally working side by side working together

[00:33:15] those both work

[00:33:17] that I personally do, research oriented or not?

[00:33:20] research oriented

[00:33:22] because my day to day every other week is out working with people on farms, doing farm work. That's different, that's my job, that's my real job. Research wise, day to day, um I mean that's a really difficult one to answer because clearly it's not just about meeting. The meetings are sort of laying the foundation for what's going to get done. In any research project you are working with other people in some capacity or another whether or not its literally working side by side to grad fecal samples some body is holding the cap and somebody is grabbing the manure. Versus working you know, alongside each other sort of more generically and the graduate advisor role you know. What have you done today, where are you at, how do we need to get this paper done, that kind of thing. You are working together, but it's not as if you are holding each other's hand getting the job done.

34:22 right, um okay I'm going to make a big assumption that well I mean, I don't really know anything about taking samples from manure, but is that a activity that involves using any kind of technology or?

34:44 yes in the sense that we need to know what animals we are taking it from. Which means we are always going back to the computer system to find out what that individual has been treated with, what pin she's in, how many days in milk she is, whether or not she has had her second or third calf. Technology is 100% behind the ultimate data. whereas, I mean if we continue with taking fecal samples the question may be does she have a certain organism in her feces, but that answer in of itself self doesn't mean much in less I put it into context of what her life cycle is and what her environment is, how she fits within the whole dairy as a system. So that absolutely is dependent on the computer

35:29 so how is your data shared, like within your group or with your collaborators?

35:34 we do things like drop box for the, you know files that are being sent from one dairy to the next. So that's the main thing. I mean their are other routes you can just grab a USB off the farm, etcetera. But drop box is kind of becoming the way for most of the file sharing for the big data sets that we use for the dairies

35:55 why

35:56 I don't know, just is. It's just there. I don't have a why/actual answer to that. That's just what the farmers are comfortable with so that's what they use

36:05 have you ever had any issues using drop box for sharing?

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36:08 no the only issue I have is if you want, say I wanted a question about a cow today, the files may not be there today. So then you got to go through the ringer role to contact somebody to put that up.

36:20 and how do you usually do that?

36:22 phone calling them

36:24 phone calling them, okay great. And you mentioned sometimes you share data by putting it on an usb drive, when do you do that over using drop box?

36:32 rarely, actually very rarely. But if on a farm for instance and I just want file now instead of having to go through the process of doing drop box I can just do it myself right now. But it's actually very rare, that was more sort of PHD level work when I was doing survey work on different diaries and there was not guarantee getting those files without manually grabbing them. So I did a lot more work like that back then.

[00:36:58] so what is the disadvantage to using a USB stick?

[00:37:01] well you've got a singular point in time whereas with drop box if you establish that contact, then you can get the records today but then if I have a question next week I can get them to do that as well.

[00:37:14] you also mentioned quite a bit about writing papers, what do you use to write your papers? What editor?

[00:37:24] just Microsoft word

[00:37:25] why?

[00:37:26] because it is there

[00:37:27] when you are writing papers is that more of a solitary type of activity or are you working with collaborators and grad students?

[00:37:37] yeah, always collaborators at some level. You may be the lead on it, but I don't know that I will ever write a paper again honestly that doesn't have some level of collaboration because that's not the nature of the game anymore.

[00:37:51] how do you work on a paper with someone else, what methods or technology do you use?

[00:37:58] us so their, even this last year there were three or four different ways that, that has happened. But the primary ways is just a simple word document track changes, realistically. –

[00:38:14] how do you share back and forth

[00:38:13] typically I am only working with maximum of 3 to 4 people who have to play a role in it, just emailing. There have been recently, a couple of different grants that I have worked on with other people with file sharing via, a drop box or something

[00:38:31] so what is the advantage of using email over drop box or a file sharing

[00:38:35] I think the advantage is that you can sort of target the individual you want to target next, which you can obviously do that with drop box as well, but with an email the process is pretty easy to have your version, send it out maybe to the group and say hey so and so you are next in line for this, the disadvantage for that and this is the big one; only one person working on it at a time. So I do love this system that I can't think of on the top of my head that we used most recently where is aloud multiple where everyone could be editing at once.

[00:39:10] was is google docs by any chance

[00:39:13] it probably was actually, I bet it was. It probably was. Super adventurous however, the limitation for that is ultimately one person might be working on sometime, somebody else might be working on something. As far as I can tell from sort of the global perspective it was a little more difficult for each individual to consistently know where things stood because you were kind of working in isolation of a part of the document. It was quite easy to do that then because everybody can come in and filter out there bit, which is great if you are in a rush. But I still like the old school method of here is the paper I need you to look at the paper as a whole or here is a grant and I need you to look at it as a whole. I need you to make those edits and then the next person can go through that.

[00:40:04] have you ever used something other than email, or whatever that was that you were using

[00:40:11] yeah sure, a hard copy. That still does happen, there are certainly people that we work with that are more comfortable with a red pen and a hard copy. It is infrequent but it does happen. Outside of that no, really not. That is basically it for current use of editing a documents.

[00:40:30] are there any advantages or disadvantages of using that hard copy method.

[00:40:38] advantages, I have to think long and hard if there is an advantage other than getting someone to do it that struggles with technology. The disadvantage clearly is that you can't just you know, adopt their edits. You can't just sort of infuse what they have put down with having to go back through the whole process. Efficiency is missing

[00:41:02] so when you are, this is just sort of a really quick back because I had a note here, when you are sharing data who are you sharing the data with? Is it within your own lab or?

[00:41:16] data not write ups

[00:41:18] yeah, data data

[00:41:20] yeah, it is just within our lab. I mean I will have single file that is on a hard drive somewhere. That people can edit as needed, but yeah it's a single spot. That's a good question because I don't know if you have been following what has happened with science and the whole issue with data management from the guy who did the survey. Which would be relevant to what you are talking about. Which is a huge issue, does the data need to be out on a public domain. I don't know, honestly I'm not real keen to go down that road

[00:41:55] why not

[00:41:57] it seems to me like, in my own data that I have worked with, until the final day of publication there, so I guess I need to catch you up just a little. if there is ever a requirement that sort of prepublication data just need to be accessible and available and that conversation needs to be open, for the public, prior to publication it could be really challenging because we will have data that will actually be tweaked at the last moment. As reviewers are coming back with questions and you realize oh wow, that doesn't make sense, where did we get that, what do we need to do? on the other hand, at the time of a publication, once that is in the public domain, I could probably see how we are going to get to the point where that's going to have to go in. but I guess my major is ultimately is that we are going to need to put together a polished form of data and that changes the game a little bit. And I don't know in your own work, which is different than mine. I don't really have polished data. There is multiple worksheets in excel files that I'm working on for the main one but theirs other things in the background that you kind of have notes on. It's almost like if we get to that point then were ultimately going to have to have a published data set, which means that the published data set kind of has to goes through the peer review as well to make sure this is polished as the published paper, it changes the game

[00:43:16] it's the same issues, and I have additional issues with this kind of data. This would never get/be public because it's obviously breach of confidentiality and just you know, all of that kind of stuff

[00:43:35] yeah, so good point, if you get into that aspect of that it's a whole different game

[00:43:42] do you have any concerns with regards to trusting collaborators or trusting anybody in the field with your data?

[00:43:50] collaborators no, I have not ever run into an issue with collaborators. And I suspect that I won't probably work with people that I would have trust issues with. That just wouldn't happen. In the field though, I haven't had to worry about it because the data has always been in isolation. Just the other day actually it came up with one of my collaborators a conversation about one of his students who is going to do a project on the back of our project and he is going to be using data from another area. And the question then was, does that data belong to those people, or if he is doing our project with our that data does that data belong to us now. Do they ultimately get to dictate what data we use? That becomes a big issue, so I personally like to really control the data just because of that issue. And with a novel, a quote un quote novel idea just like this dally. Once you start allowing other people and other people's data to be part of that process, and maybe there is a little bit of a lack of ownership of that. I wouldn't call it a trust issue but there is sort of a grey area of how that actually gets put into the public domain then, from a publication stand point or otherwise or a presentation stand point. I'm still unclear on that of actually how that is going to play out. I have yet to have issue with data I have generated and having other people poch it otherwise, it hasn't been a problem. But I'm not totally clear on how to use others peoples data for a project of our own if those other people are not necessarily part of the project. Don't know, don't know how that is going to play out.

[00:45:30] if you could have any kind of any kind of hypothetical future technology. You don't need to limit this to what we can and can't do with technology that would support collaboration or support you in your work. What would it be, what would it do. What kind of features would it have?

[00:45:50] honestly the main one would be what I was talking about earlier that I, for the life of me can't think of the term, holograms. That kind of thing. There is supposed to be work out there that has actually done this where you can have hologram meetings. That would be huge for me. If we could ever get to the point where we could all virtually all be around a table, so we could all be in our own room, I don't care where we are. But we are virtually all around a table and it feels like we are all virtually around a table. Honestly I think that would be huge. Because suddenly space just doesn't mean anything anymore. And you would be able to call out that person across the table who is less likely to speak. That would be the main one. And the other thing from a technological stand point that I think about is actually scaling back technology a little bit with emails and I don't have an answer for this but I would love there to be rapid communication that still puts the elements of the outcome on the person generating the communication. As oppose to the email, where I send you and email and I say can you do this for me. It is very different than if I pick up a phone and I call you and I have a conversation with you. Because in an email, it's off my plate, it is now in your plate. So I don't know how to describe what I was suggesting but I would love it if somehow there is still ownership similar to face to face, similar to a phone call. so that anytime I am asking for a favor it doesn't just get done totally point blank away from me once I hit the send bottom, Do that make sense

[00:47:28] yeah it makes sense

[00:47:28] but I don't know what that technology would look like. It's almost like scaling back technology and forcing us to be accountable. Because truthfully emails have gotten to the point where

accountability is just shot. You can just send out a drove of email to ever the hell you want to and walk way and go for a bike ride and disappear and not I just put it on 20 other people to do my job for me. I don't like that. I hate that actually.

[00:47:55] I have a couple last questions in terms of demographics. What is your current position?

[00:48:03] I am an assistant professor.