

Episode 1: What Are Broader Impacts?

[Intro Music]

[Intro]

Julie:

Hi. This is the podcast Stop, Collaborate and Listen! We are Julie

Eve:

and Eve.

Julie:

This show is all about relationships, but not in the way you might think. We're talking about partnerships for those of us who are connecting public audiences with science, and science with public audiences. Today we're going to talk about broader impacts, what even are broader impacts?

And we're going to talk about the role that science centers and museums and zoos, those places we love to go and have fun and learn about science, the role that they have, in being partners for broader impacts. I'm excited to get into it.

Eve:

All right. I'm going to share our first letter:

Dear Stop, collaborate and listen,

I work at a small zoo, and several times a year, a researcher from the major university in town will call and ask us to be a part of their broader impacts. We really like the idea of working with researchers, but I don't really know much about broader impacts.

So why are they reaching out to us and what should we know about broader impacts before we decide whether to say yes or no?

Signed. Wildly confused.

Julie:

Yeah. Wow well, wildly confused this is such a common issue. Different language happening at different organizations and people assuming you know what they're talking about when they ask and not really knowing how to deal with that. So I'm really glad you asked, we'll definitely be diving a lot deeper into this through the course of this podcast.

Eve:

And this kind of thing happened to us all the time. You know, I worked at science centers for a long time and it was really challenging because so much about the broader impacts mechanism was really just unfamiliar to us. And in many cases, we didn't even realize that the researcher themselves might not have had their mind fully wrapped around it.

They may have been new to broader impacts, too. So these calls would come in, they would be sort of somewhat randomly routed to different members of our education team, and we would do our best to accommodate their requests. But, you know, at first, I really struggled to understand how we fit into this larger project and to the process. And, you know, we actually wrote about this a little bit in the Association of Science and Technology Center, ASTC's Dimensions magazine.

A few years back, we had an article called Balanced Power, Powerful Impacts Partnerships for Broader Impacts Design.

[Discussion with Guest]

Julie:

So to help us tackle this, we're talking with our friend Susan Reno. Susan is the queen of broader impacts. She's the person who has really built community around broader impacts and is the person who can help us put this in context. So, Susan, welcome to Stop, Collaborate and listen. Can you help us put this in context? What is this broader impacts thing all about?

Susan:

You know, when I talk about broader impacts, the first thing I do is I usually define it by saying all proposals submitted to the National Science Foundation are evaluated on two criteria. And it's true, they are. When you submit to the National Science Foundation, you're judged on the intellectual merit, which is the strength of your science, but also on your broader impacts, which is the benefit to society, it's where research meets communities, right?

It's where research has a benefit for people outside of just the standard science community. And so that's to me the thing that's really exciting about the researcher wanting to reach out to your zoo because there's a great opportunity for them to do things that may be outside of their comfort zone, but also to talk to people who they may not be able to talk to on a regular basis because they're not reading their journal or they're not going to their conference.

Julie:

So you know, that language broader impacts. People might already think they have an idea of what that means but you just talked about you're judged on your broader impacts, your benefit to society when

you submit a proposal to the National Science Foundation. How do we kind of bring that language into reality for people who do work at places like zoos and museums and science centers? What is language that will help them understand it?

Susan:

There's so many different words people use to describe this. So we talk about broader impacts all the time because that's the language of the National Science Foundation. But a lot of people use societal impact. People use research impact. People talk a lot about knowledge mobilization, right? This idea that we take, the knowledge we create and generate and then we move it out to some other space and it makes a difference in someone's life.

When I think about broader impacts, I really like the idea of it, right? It's the idea that your science, your research is more broadly applicable or has an impact beyond just your circle of influence.

Eve:

So I think I'm hearing you describe a lot that sounds kind of like like outreach, but it's kind of more than outreach, right? It isn't. It's outreach plus, is that right?

Susan:

Absolutely. I love the way you say that outreach plus. Because a lot of times when I first started, outreach was what we thought of it. Science outreach. You hear that all the time. And now we tend to not use that as much. We think about engagement. We think about two-way communication between the researcher and the public. When we talk about outreach, it seems like we have all the knowledge and we're sending it out.

Today when we talk about broader impact, it's more about engaging with the public, thinking about how people want to be addressed, how people want to be included in the work you're doing. It's thinking about more than just, I have this great science and I have the answer and I'm going to give it to you. No, it's really being intentional about how you communicate that, who you communicate that with.

And I think that's really exciting. So I like this idea of outreach plus because it's more than just us giving knowledge out, scientists actually gain more, I think, from engaging with the public because they give them new ideas. They give them things to think about that they may not have thought about before, or a way to look at a problem that they never even considered before.

Julie:

So, you know, we don't know much about wildly confused, but working at a zoo, we can assume that they're in an interpretive or education space and probably have some something unique to offer in a

broader impacts partnership. How is what people who are working at zoos, museums, aquariums, the education folks, interpretive folks, how is what they do different than broader impacts?

Susan:

People who work in zoos and aquariums and science centers and museums, those are - you have a expertise. You have a unique experience. You are living this life of translating science and making it accessible to the public every day. And I know that as a scientist and as a researcher, I want that. Like, that's not my expertise, that I don't do that every day.

I don't live it. I don't understand how to make an exhibit. I don't understand the constraints of that. So what you're bringing to this conversation is you're bringing your expertise to bear on a research project. You're going to put your expertise together with the researcher's expertise, and all of a sudden you have something that is accessible to the public that people want to learn about.

People want to engage with. I think you're that extra plus you bring something to the research that wouldn't be there otherwise. We need you.

Eve:

And you know, in my experience working in the Science Center world, I think I often felt, I don't know, a little intimidated when some of these folks would reach out, assuming that I was just going to be sort of a lucky recipient of some of what they had to share. But I really learned over time that they were - these researchers were often really eager to learn from us.

They were many times enthusiastic about getting involved with engagement work but knew that they had a lot to learn and so they were excited to be able to collaborate and partner with us.

Susan:

Well, and I would just add to that and say, I think a lot of times researchers are intimidated to reach out if they don't have a contact at your museum or your zoo or aquarium, they may not know what to do. And so it's like it's, you know, cold calling someone or cold emailing someone, and you're afraid they're not going to answer, you're talking to the wrong person, and sometimes you don't actually know what you want. You just think this could be a great idea, but I don't even know what the possibilities are.

Julie:

Sure. And then sometimes you think you know what you want, but you don't have enough context or information about what all the possibilities are to really imagine something grander or something that will have a more positive impact on the public that engages with your science. I think that that's a really important part of this.

Susan:

Well, and I would argue that another important part of that is a lot of times people don't understand the cost behind what they're trying to do. A researcher may come in with the idea that they can do this really huge thing for a little bit of budget. And so I think one of the things that'll be important in the conversations are how you decide what makes sense and what that budget looks like.

Julie:

Yeah. So you just sort of alluded to one of the things that might go wrong in these partnerships, which is sort of mismatched expectations about cost and what that public engagement work that a zoo might do is worth. I wonder, Susan:, if you could tell us a little bit about some different things that you think make these types of partnerships really worthwhile?

Susan:

I think the things that make them worthwhile are the opportunities to learn something new and to try something different. A lot of the researchers that I've worked with are anxious to try something innovative and new, something that they may not have tried before. Many of them have been to a museum or a zoo or an aquarium, and they are excited about that and are actually really looking forward to being part of, like being a partner in that way.

So I think that's one of the benefits. I think also reaching audiences that you may or may not be able to reach in a normal way, even just doing a public talk, you don't get to interact in a way that is fun and inviting. And the other thing, too, is a lot of times when we do a broader impacts event, sometimes that's not a big enough draw just to say, see the researchers coming and we're going to give a talk.

But when you come to the zoo, when you come to the museum, you're in the setting. There are people who are coming. You can feel the energy. It's exciting.

Julie:

One thing we've been able to observe in the broader impacts design project, the partnerships that Eve and I have been working with is some great friendships that's grown out of these partnerships as well. And so sometimes, even though a researcher might be a little scared to make the first call and a person at a science center or a zoo might be a little scared to answer the call.

It can turn - something small can turn into a long-term relationship that really provides a lot of opportunities for scientists to engage with the public and for zoos and aquariums to bring scientists, more scientists into their realm. I think that's a pretty exciting part of this.

Susan:

I think that's absolutely one of the benefits of this. One of the things that can be a pitfall is a researcher comes in for what seems like a metaphorical 5 minutes and then leaves and is gone. I think one of the things that could be a huge benefit to both the zoo and to the researcher is this long, long term, ongoing relationship where you can do some things over time that you might not have been able to do before.

You can do some evaluation and assessment of the benefit of the program that you're doing and really get an impact from staying someplace for a long time. I also think that there's just the opportunity to do innovative and new things. I mean, I could go to the zoo every day for a year and there'd be something new that I could see or some new idea that I would have for some sort of public engagement event.

Right. And so I think that helps keep the the broader impacts fresh and exciting when you're in that long term relationship. I know that seems like the opposite, but it gives you the opportunity to try a bunch of different things and see what makes the most sense.

Julie:

Nice. So, you know, we we titled this Stop, Collaborate and Listen. And what I heard in our discussion today is a lot of listening, right? So there's a little bit of fear and trepidation entering into these partnerships. Apparently, quite a bit of confusion can stem from these initial conversations. And what I'm hearing is that just listening to each other, there's a lot of opportunity.

So what would you say is the best way for researchers to approach science centers and zoos and aquaria in broader impacts partnerships, Susan?

Susan:

Honestly, I think it's with humility and grace and with an understanding that both parties bring something to the table that each other needs. Right. We've all been asked by someone who came in and thought that we are - that we have to work for them or we have to fix this thing for them, or they wait to the last minute.

And that's the worst, right? You want somebody who comes in and says, I really want to be a true partner with you. Tell me what we can build together versus this is what I want you to do for me. What can we build together? How does this work? What expertise can you bring to my team that I don't have? What can I bring to your team that you may or may not have?

Julie:

I love that. I love that you've brought intellectual humility into it, Susan. And I also I know I've known you for a long time. I know you're a big fan of in moments of overwhelm, taking a step back and saying, What can I do for you? You say that to me almost every time that we get the chance to be together in person. And it's something I always really appreciate about you. And it kind of brings a moment of calm to any

conversation that we're having when Susan steps back and she says, "what can I do for you? What do you need?". And often the answer is, I don't need much. I just needed to have this conversation. But I think that that's a real key point in the in the listening is also not just being quiet and listening, but asking the questions that give people a space to say what they need to say.

Eve:

You know, Susan, a few minutes ago, you alluded to something akin maybe to a menu. And actually, that's something that our partners within our broader impacts design project found was really valuable, really useful. And so one of the tools in the toolkit that we produced as a part of this project is actually a guide that can help potential partners establish something like a menu so that they are prepared as principal investigators, as researchers come through and want to start having this conversation about some potential BI - broader impacts - work, this menu is there just to help the conversation get started to do some level setting. Folks have found it to be really helpful.

Susan:

I think that's got to be a great tool and people have to really enjoy it because it's something that the people that we work with that we try to partner with when we work with them, we ask them to create that and a lot of times they don't know where to start. So having a tool that can help potential partners do that I think would be very useful.

Julie:

So speaking of tools, the way that we've remained engaged and, as friends and colleagues with each other, is through an organization called Advancing Research Impacts in Society. I wonder if you could tell us a little bit about that organization.

Susan:

Absolutely. So ARIS is about four years old and grew out of the National Alliance for Broader Impacts. So as Julie: mentioned, we've known each other about ten years and we've been engaged in this work nationally in building up the broader impacts community for the last ten years. It's hard for me to believe that that's true, but yes, it is.

So we celebrated our ten years together. ARIS is wonderful because it's a community of practice around broader impacts, but it's very broad. We have about 1300 members worldwide, so it is an international organization because the U.S. is not the only country that is struggling with the broader impacts of research. And as I mentioned, there's lots of different words that people use or terminology that people use to describe it.

A lot of that comes from other countries. They've done a lot of thinking about what this looks like, both in theory and in practice and in terminology. So ARIS is an international community of practice, and it's

really designed to do two things in my mind. It's to build capacity within it in individuals, and that includes researchers as well as practitioners. And we really think about practitioners broadly. And then to build capacity within organizations and institutions.

Julie:

So I thought it might be fun just because I haven't done this in a while to type what is broader impacts into Google while you were talking there and ARIS comes up so it's researchinsociety.org and its broader impacts advancing research impacts in societies is how it comes up. I wanted to ask you to kind of complete a sentence: a researcher who is an excellent collaborator always...

Susan:

Listens first. I think that's the biggest thing for me. They listen first and then work together to build something. They're listening with the intent to co-create something. Seek to understand where the researcher is coming from. I think on both sides you have to leave your assumptions at the door and come in with the idea that what we can create together is going to be better than what I thought of on my own.

Julie:

That sounds like a call for sort of starting small and starting with listening and understanding each other, then growing into something big that can have long-term value. So we talked about researchers wanting to engage. We talked about, you know, museums and zoos and science centers being great partnership opportunities. But why do they have to do this broader impacts in the first place?

Susan:

Thanks to many different stakeholder groups around this, broader impacts is really seen as an equal review criteria. So if you put in a proposal into NSF and you have strong science, but weak broader impacts, the likelihood of getting funding goes way down. And so researchers are, one, trying to be more competitive on their research grants and have a better chance of getting funded. But also, we have a lot of researchers who really want to do great outreach and engagement. And so they're finding more ways to incorporate that into their work.

Julie:

What else do you want this community to know about broader impacts, is there anything we didn't get to today that you feel like is really critical.

Susan:

I think that you are a valuable part of the broader impacts community. We could not do what we do without you and that you bring something to this group that we - sometimes we don't even know that we need. I feel like there is expertise that I can use and that I need and that I think the research community needs. And so, my last thing would be just thank you for what you do. Thank you for bringing joy to people all over the world and for helping researchers be able to be a part of that. I think that's important.

Eve:

I think it's worth just saying, you know, broader impacts is complicated and there's a whole community of folks trying to navigate this world together. And that's pretty exciting to see. Wildly confused. I hope this helps clarify some of this and gives you some really useful resources to start your exploration of broader impacts. It sounds like there's an incredibly active and rich community out there of folks who'd be willing to help you navigate this world and broader impacts I think just offers great opportunity to do new and exciting activities and to build some collaborations that can grow and can be lasting.

[Outro Music]

[End Credits]

Eve:

Thanks for listening to Stop, Collaborate and Listen with your hosts, Eve Klein from the Institute for Learning Innovation, and

Julie:

Julie Risien from the Oregon State University's STEM Research Center.

Eve:

There are so many partners who supported this work. For a full list, please see our podcast description. Specifically, we want to thank Liz Neeley from Liminal and Julia Furlan for their guidance and consultation.

Julie:

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