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Hello and welcome to Telling Science Stories. Once a publishing course at Simon Fraser University, this show is all about what makes good science communication. From journalism to YouTube videos, I speak with experts in the field about the techniques and theories they use to tell better science stories. I'm your host Alice Fleerackers, and this podcast was originally recorded on the unceded and traditional territories of the Musqueam, the Squamish, the Tsleil-Waututh and Shishalh nations.

One more thing: Siddharth has some unexpected construction going during the recording of this episode. We've done our best to reduce it, but you'll probably hear a bit of noise in the background.

And today I'm joined by a very special guest, Siddharth Kavgaria, who is a science communication practitioner and researcher working at NCBS Bangalore, and also the founder of the SciComm SciClub, a flagship initiative for engaging with the science of science communication. So basically exactly what we're studying here. He spends his time exploring the research practice continuum within science communication, contributing to mentorship, capacity building, and DEI or diversity, equity, inclusion efforts, and developing intersectional science engagement practices for the global south. That's a pretty impressive sounding bio. I don't know where you find time for sleep or other parts of life or doing interviews like this. So thanks so much for making time. It's really nice to have you.

I just wanted to say, thank you so much for having me for today's interview. And I'm really, really excited about this conversation.

So maybe just to get started, what is inclusive science communication? Like, how would you define this term?

It's very multi-dimensional in the way that it can include a lot of characteristics and ethos. But some of the most important ones that I would say that I think are important in terms of inclusive science would be to sort of prioritize stakeholders and their motivations for engaging with us rather than scientists or science communicators single-handedly deciding that this is what we want to communicate and engage people with. It's really, really important to sort of put yourself in the shoes of the people that you're trying to engage and understand what do they need, why are they interested in engaging with you, and how can the information that you provide actually be useful to them? So I think understanding your audience's motivations to engage with you is kind of really important. And this, of course, requires a lot of active listening. It requires you to reflect on what you're doing. It takes a lot more effort and time to do this. But I think it's worthwhile in doing this because if you don't do it, you really can't be inclusive. This is sort of the first step towards being inclusive. If I think about the term inclusivity more literally, it could include marginalized voices. These could be practices which are less known or people who are not usually part of such conversations and sort of looking at context and situations which really don't find a way into our day-to-day conversations. So of course, that's the more literal meaning of inclusivity. But I think more importantly, it's also important to sort of engage or sort of facilitate a dialogue between people who come from different backgrounds, from different levels of expertise and different life experiences, even if there are differences of expertise, of power, of values, of ethics. So I think before you can actually move towards inclusive cycle, facilitate conversations which can sort of help people understand each other's point of view. So basically being a knowledge broker or sort of being a person

who can help understand different communities or different groups of people's point of views is also very important. Of course, there are elements of social justice and decolonization.

That's a lot to achieve. It sounds like a quite challenging task to try to understand what a community needs, try to start those conversations. How, for example, are you fostering that kind of inclusion in the work that you do at SciComm SciClub?

In my work with the SciComm SciClub, I'm actually not engaging with communities on the ground directly. I'm actually engaging with the community of practitioners, of scientists, as well as science communicators, both freelance and professionals. In some ways, a level meta of what we usually do as science communication practitioners. I'm actually trying to engage the community of SciComm practitioners with the understanding of how you can make your science communication more evidence-based. How can you use research in science communication and the multidisciplinary field of science engagement, psychology, decision-making, science, cognition. I mean, there's a whole lot of things that can come into understanding how do you engage people with science. So my work at the SciComm SciClub is actually somewhat slightly easier because I'm not really dealing with all the communities. But in terms of how do I foster inclusion in my work, I would say that I've been mentoring a lot of science communication practitioners in terms of making their practice more reflexive, more evidence-based, and more inclusive. We have had created a database of science communicators, which is aggregated by their pronouns, their gender identity, their locations, the languages that they teach in or they communicate science in, the research interests that they have. So by creating a database of science communicators, we're actually also allowing other people to sort of engage with and make their science communication more. We've also engaged in some policymaking efforts where we have actually consulted with a broad spectrum of science engagement professionals. And we have tried to understand how can we make science engagement in India more inclusive. So these are, again, not direct initiatives aimed at inclusion, but they are sort of indirectly helping inclusion downstream.

Sounds like it runs at a lot of different levels, right? That you can't just do a quick fix at one of these levels and expect it all to work out. I know one thing that we're reading about a lot right now in the research is this importance of moving away from top-down one-way communication to bottom-up participatory public engagement and dialogue. Maybe you could tell us a little bit more about what the research is saying about fostering multi-way communication and kind of what does that actually look like in practice?

It's very important to sort of engage with people, not just in a top-down approach, but also give them the agency to sort of not just decide what they want to take away from it, but what does the science engagement initiative actually help them do? Is it for increasing their awareness about vaccines? Is it about convincing them to do certain kinds of things? But who is setting the context for convincing them? What is in it for them? So in some ways, if you move towards a more participatory or bottoms-up approach, it's not just about letting people ask questions or deciding on what we want to communicate based on the people, but it's also giving the agency to people to sort of change the entire setup in which they are engaging in the science communication activity. There is no other way that you can actually engage with the community on the ground or understand people's motivations to engage with the science and actually make science more reflexive. In some ways, science communication can also be a tool to question science itself, make science more democratic, sort of engage people in learning about the benefits of science, but also questioning science and the process of science. And all the problems that we see downstream in terms of people not trusting science or people being skeptical of what scientists' intentions are for doing certain kinds of science communication can really be rectified not

when we have developed the product, but sort of when we engage with them more upstream before the product is fully developed.

The question that kind of comes up for me is like, what does that actually look like in practice? We hear this term upstream engagement, but does that mean you have to go interview people in cafes or do surveys? How do you start to have those conversations early on?

If I can answer that question in a slightly different way is that I would say that a lot of science communication research and science communication models and even the community of science communication practitioners are sort of coming back towards saying that we should have community-based or bottoms-up or participatory approaches, but this is not something which is new. When we look at the history of science communication itself, we often think of scientific controversies as the way that sort of push the field of science communication forward. And we think that controversies like the mad cow disease or the nanotechnology debate, all of these were sort of nucleating or catalyzing events in the history of science communication or develop. But if you look at participation in community building, dialogue, sort of community-centric efforts, these have been in practice for the last thousands of years. And it's just that it has not been studied because our understanding of science communication and its history is very Western and Eurocentric. So if you start looking at more indigenous local practices in the global South, these initiatives and efforts and these ethos of participation in community building have always been there. And so I'll give you one short example. I don't want to take too much time. So if you look at the original practice of oral storytelling, now, these oral storytelling practices were really based in the context or the surroundings that the people were living in. And they did not differentiate between the production and the sharing of knowledge. So knowledge production and sharing were basically intertwined with each other in the sense that the storytelling and the oral aspect of sharing that science was as important as understanding the natural phenomena around it. And so when you sort of combine these practices of knowledge production and sharing, it gives rise to a form of science engagement or science communication as we understand it right now. I mean, these people did not call it science communication, but what we call a science communication is actually the oral storytelling practices in Aboriginal Australia, but also a very old form of science communication, which really are very community centric, are very participatory. It just inverts the entire understanding of what's top down or what things are because there is no top down or bottoms up. It's all inclusive and together, right?

Yeah. In Canada, we're talking a lot about indigenous knowledge. And one thing that has come up in the science communication literature has been like, what are we counting as science? Are we considering this? But then also what do we count as communication? Like, as you were saying, is oral storytelling or conversations, they are sort of a totally core form of communication. I'm wondering, I know you're based in India and I know nothing about what sort of the science communication context is like there. So maybe you could give us a little bit of a sense of like, what is the reality like of trying to communicate science right now in India? So we have a sense of comparison.

So I am someone who was trained in the UK in science communication. And I really came with this knowledge of science communication models. And these are the coaches and dialogue and deliberation and participation. But when I came back to India, I actually had a lot of difficulty in sort of translating that into action or implementing all of those learnings that I've learned. And I realized after within a few months that the context of engaging people with science, what I had learned in the UK was very prominent and useful and made sense in the Europe context, but it didn't really translate into India very easily. And the reason for that I realized after a little bit of introspection and study was that in India, the social cultural context is incredibly, incredibly complicated and complex. So you have more than 100

major languages in India, the ethnicities and the cultural changes every 100 kilometers. There is a stark urban and rural divide in India. There is a lot of problems with pseudoscience and sort of misinformation that that waves in India. There is an urban and rural divide. Scientific literacy is really, really patchy in some places. It's really high in some places, it's really low. And science, by science capital, I mean, the access to sort of ethos and practices and people and surroundings that really make you interested in science. That's really, really, really difficult in India, because a lot of people are still struggling with basic developmental needs, and they don't really have the luxury to sort of engage in curiosity-driven science. So they're often stuck at need-driven science, which is understanding agriculture and sanitation and health and hygiene and things that immediately affect their live and live roots. And there is a really, really strong need to sort of engage them in curiosity-driven science communication, which is to sort of engage them in the awe and the wonders of how is it that science actually pervades our life in a day-to-day basis. So there is an intersection of a lot of social-cultural contexts, which make it incredibly difficult in India to implement any science engagement initiative, because everything that you do in, say, in the place that I'm living in will be very, very different if you move just 50 kilometers north or south. So in some ways, what is really needed is an Indian way of communicating science and engaging people with science. And when I say an Indian way of communicating science, what I mean is that something which is really, really embedded in the local context, which is driven by local practitioners who not only understand the local language, the local cultural practices, the local sort of knowledge, lived experiences of the local context, they should also be the people who are sort of developing the science communication materials and content. So if you are going to translate content from English to, say, a language, say, Hindi or Bengali in India, what happens is that there's a two-step translation. So first, you're translating from English to Hindi, which is the language, but then you're also translating something which is scientifically jargon-heavy to something which is accessible to the public. And because there's a two-step translation, there's a lot that is lost in this translation process, because what happens is that when you're communicating science, you often use analogies and metaphors and local examples, which makes sense in a particular culture and context. But if you're translating that into another culture and context, often when you're translating it, the metaphors and analogies don't really work. So what you and this two-step translation process is incredibly complicated, and it's really time consuming, and it does not really give you good results. It's better to produce de-novel science communication content, which is produced by local practitioners embedded in the local context. And when they use more participatory approaches like games and exhibitions and theatre. So India has a really rich tradition of folk art and theatre and tradition. And so using these performative aspects of science communication would be a really interesting way of communicating in the region of science, rather than having something which is written, because not a lot of people can read and write in villages in India. So you really need to understand the audience and deliver and use a format and approach that really works for them.

And so what kind of advice or guidance do you give when you're mentoring someone to incorporate more EDI into their science communication practice?

When I do mentorship, I try not to be prescriptive or tell people what to do or what not to do. Instead, I try to use reflexive prompts, where I ask them questions which force the practitioners to think about their practice. Who is your target audience? Or why do you think the target audience is actually interested in engaging with you? What's in it for them? How are you going to understand their context and motivations? Have you considered people who might not really be the people who are at the public facing end of the initiative of the research institution, but might actually be the cogs and wheels of the institution and might actually be a much more stronger force in changing a practice or a convention rather than someone who's just in the PR side. So it's a series of questions. And these kinds of questions

when I'm mentoring people really helps not just the people I'm mentoring, but it also makes me learn a lot of things. I learned incredibly a huge amount of things from the people I mentor. And I think it's more of a give and take relationship rather than me offering them advice. I learn as much as I offer them advice. I really don't have to sort of tell them after every few days that you should do this or shouldn't do that. When you give them reflexive prompts to think about, they often come up with solutions which work for them and which are much more long term than a short term fix. They get back to me after a few months and they tell me that, oh, I thought about this and I thought this would also be a way of doing it, which is something that I have not thought about. And I tell them, think about these questions and think about how you can solve these questions. Only you can know how to solve these questions in the context and with the audiences you work with. Because I have no experience working with the target audience that you're working with. I may or may not have. And that's how the mentorship session goes usually.

What's usually a good question to start with? The who, what, how questions are usually good questions to start with because those are things that most people have usually thought about. But once they have answered who's your target audience, what kind of science are you trying to communicate and what is the level of scientific knowledge or expertise the audience has, these are very easy questions to answer. But once you start getting into the domain or the territory of what's in it for the audiences, that's the question which usually stumps a lot of the practitioners because I find it surprising that most people have not thought about it explicitly. They may have implicitly, but most people do not think of it from that point of view that they need to put themselves in the shoes of the audience. And that really changes the paradigm in the sense that it doesn't become a one-dimensional or a one-directional approach. It suddenly becomes much more dialogic. I mean, I may not use the term dialogue. I may not use fancy psychom terms, but when I say what's in it for them, why should they care? Why should they bother to come and listen to you and spend an hour of their day with you? I think that really changes and it really sparks a switch in a lot of people's head. And they start thinking, what can I do to understand? And I think that's the segue and that's the foot in the door that I use to ask the more reflexive questions. And the set of questions I ask towards the end are very, very specific to the person I'm talking to and what their science initiative, their approach, their format is. So it really differs and it's an open-ended conversation. I just have those five or six questions that I begin with. And often, it just becomes a conversation and we keep asking each other things. And they ask me things, I ask them things. So it's pretty much like what we're doing right now.

One thing I'm really getting is there's a lot of work that goes into this and a lot of reflection and questioning. And I'm just wondering, what's one of the biggest challenges we're facing as a field with respect to equity, diversity, inclusion issues?

There are so many challenges. I mean, it's very difficult to pinpoint one challenge. There isn't enough recognition for alternative forms of knowing, doing, seeing. What we understand by science, and by science, I specifically mean Western science, is a very Eurocentric, very Renaissance sort of driven understanding. Western science is a set of ideas, norms, values, epistemologies, ontologies, whatever, which is a method of understanding the world. When it becomes problematic is when it sort of posits itself or it positions itself as the only way of knowing and understanding the world. And I think that becomes a problem. So Western science is amazing. It's great. It has a lot of things. It really sort of erases and diminishes and sort of does not allow other forms of knowing to sort of come into picture. And I think that is one of the biggest challenges of inclusion and diversity and equity. So for example, I can tell you something. So I have spoken about decolonization science and science communication multiple times. And oftentimes I'm forced to refer to papers and abstracts and articles which are cited in

the Western literature. And this requirement to refer to things that have been cited in the Western literature is really, really limiting for me because a lot of these practices, especially oldest literary practices, are not referenced or cited anywhere. So how do I even include and design an inclusive science communication pedagogy around it if I can't even sort of rationalize the use of these things because they cannot be cited? So this requirement of having things cited, having things to be in a certain way, this is all a requirement of Western science. And this really hinders with inclusion and diversity because you really can't, I mean, you can't develop a framework for the West and expect the East to fit into it. If you want to develop a framework for Eastern science and for Oriental science or whatever you call it, for non-Western ways of knowing, you really need to start from the scratch and develop a framework that works for us. You cannot really expect our culture and tradition and our ways of knowing to fit into Western science. And again, when I say our, I don't really want to sort of imply a binary that us versus us, us versus them. What I'm saying is that there is a lot of knowledge and indigenous ways of knowing and rationality and skepticism and Western science do not really have to be mutually exclusive. They can really be combined and sort of be symbiotically sort of joined together. And there are great examples in the global South of doing that. So one example that I've also cited in my course in my course is the example of creates in Western Africa where traditional science communicators were not able to communicate about Ebola, health communication efforts around Ebola. And they recruited griots who are basically songwriters and historians and people who travel around the country. And they really performed a lot of folk art and song and dances. And they were able to communicate a lot of health information about Ebola, which were much more effective, which was taken up by the communities much more effectively because they were based in the local cultural context. And this is a great way of combining folk tradition with Western science. And it doesn't really have to be mutually exclusive. So I stop with that because I can go on talking about this. This is something I'm really, really, I feel very strongly about. So yeah.

Because I hate ending on a note of pessimism. Is there something about the field of science communication with respect to EDI that gives you some hope or makes you feel happy when you wake up in the morning?

Yes, absolutely. I think I'm seeing a lot more science communicators using science communication as a tool for questioning science, as a tool for questioning the power and hegemony of systemic issues in science. And this goes beyond just science communication. It's also about asking and questioning practices in science, which is about mental health, which is about inclusion and diversity in the practice of science in general. There is a lot more interesting and important work coming our way. And it's already happening to a large extent. But I'm hopeful. And I don't think there's anything to be scared of. I think we're going in the right direction. It's only a matter of time when we sort of move towards a much more globalized and more inclusive understanding of science and communication. So on that note, I'll stop.

That's great. That's a very nice, positive and uplifting note to think on. So thank you so much for your time and sharing your expertise and your questions with us.

Thank you so much for having me. It was great talking to you and finally meeting you.

Thanks so much.

All right. Have a great day ahead. See you.