

Making space for awe and wonder with Katherine Mathieson

(Research Adjacent Episode 82)

Katherine is championing science communication for its own sake as Director of the historic Royal Institution

<https://researchadjacent.com/katherine-mathieson-episode-82/>



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[00:00:12] **Katherine Mathieson:** Building a theatre before you've even started building your laboratory, it says something about the ethos of the organisation.

[00:00:19] **Katherine Mathieson:** I knew that I really loved science. But I didn't want to be a scientist. And I didn't know what the rest of that sentence was, but I was very sure about that sentence from quite early on.

[00:00:28] **Katherine Mathieson:** There are lots of ways of generating these experiences of awe and wonder, and I think that is what brings us together as human beings who participate in science, and that's what positions science as a shared endeavour.

[00:00:39] **Sarah McLusky:** Hello there. I'm Sarah McLusky and this is Research Adjacent.

[00:00:46] **Sarah McLusky:** Each episode I talk to amazing research adjacent professionals about what they do and why it makes a difference. Keep listening to find out why we think the research adjacent space is where the real magic happens.

[00:01:02] **Sarah McLusky:** Hello there. I'm your host, Sarah McLusky, and welcome to Research Adjacent. Now, if you're listening to this episode around its release date, you are probably gearing up for Christmas, and perhaps one of your Christmas highlights is watching the Royal Institution Christmas lectures, which have been broadcast on BBC television since 1966.

[00:01:20] **Sarah McLusky:** Well, today you're going to meet Katherine Mathieson, who is the current director of the Royal Institution and one of the people behind that iconic lecture series. I've known Katherine since we worked together about 15 years ago. She worked for the British Science Association and I ran unnecessarily large science education events for schools on their behalf.

[00:01:41] **Sarah McLusky:** As you'll hear, Katherine first got into science communication in the late 1990s working for Science Line, a charity where people could phone in their science questions. Something that many of you listening probably can't even imagine being a thing.

[00:01:57] **Sarah McLusky:** We talk about the 226 year history of the Royal Institution and why the building means different things to different people. It's not just home of the Christmas lectures. It's also an active research facility, an education space, museum and membership organisation. It's also a place for sharing the awe and wonder of science, something that Katherine is very passionate about, and we talk about why finding a bit more awe and wonder might help to address current challenges around misinformation and anti-intellectualism.

[00:02:26] **Sarah McLusky:** Now I did try, but Katherine was careful not to share any spoilers of the upcoming Christmas lectures, but I can share that this year's presenter is space scientist, Maggie Aderin-Pocock, and that you can watch a live stream of the lectures being filmed on the 11th, 13th, and 16th of December in over 25 locations across the UK.

[00:02:46] **Sarah McLusky:** I'll put a link in the show notes and you can check that to get the details and see if it's coming to a place near you. But for now. Listen on to hear Katherine's story.

[00:02:56] **Sarah McLusky:** Welcome along to the podcast, Katherine. It is lovely to have you here and also to speak to you again. It's well over 10 years, I think, since I've last spoken to you so lots to catch up on. But for our audience who haven't perhaps met you before, could you tell us a bit about who you are and what you do?

[00:03:16] **Katherine Mathieson:** Sure. Sarah, it's great to be here and to talk to you again. I'm really looking forward to this conversation.

[00:03:21] **Katherine Mathieson:** I'm Katherine Mathieson. My current role is Director at the Royal Institution. And my background, my journey is very much through science, communication and science education. That's what I'm passionate about.

[00:03:33] **Sarah McLusky:** Yeah, and that's very much where we know each other from in the past. So tell us a bit more about your current role, though.

[00:03:39] **Sarah McLusky:** The Royal Institution, a very iconic organisation. Tell us what it, what does it mean to be Director there?

[00:03:47] **Katherine Mathieson:** It's really, it's a joy to be Director, to be part of the team at the Royal Institution. We do such a wide range of science communication, and related activities that I love being immersed in the day to day.

[00:03:59] **Katherine Mathieson:** You know, we do something different every day. There's always different people in the building or getting in touch about projects and contents, and it feels really nice, really rewarding for me to be so close to the audience that we're working with. I can literally drop into activities that are going on in the building or in schools around the UK or other partners.

[00:04:18] **Katherine Mathieson:** And I just I. I've worked in a range of organisations that work in a, in different ways to support this kind of activity, but it's really nice for it, to feel, feel very tangible. Like I can just go and talk to people, to young people or audience members or whoever about what they liked about something or what they didn't like, and so I'm really enjoying that being part of that kind of team.

[00:04:38] **Sarah McLusky:** Yeah, so the Royal Institution Building now is, it's almost a bit like a science centre, would that be a fair thing to say? But a very historical one.

[00:04:48] **Katherine Mathieson:** So I think the Royal Institution building is a bit like, I dunno, some kind of kaleidoscope. 'Cause people come into the same building, they come through the same, everyone comes in through the same door and they come into the same building and they see the same things and they go, oh, I know what this is. And then they say something completely different. So some people come in and they go, oh, it's a centre for research because we have researchers on the premises.

[00:05:10] **Sarah McLusky:** Right. Okay.

[00:05:12] **Katherine Mathieson:** Wet laboratories up on the third floor, we've got an electron microscope under the stairs. We've got, and we've got a team of researchers who are part of UCL doing research on biomagnetic materials. So they're like, they come in and they're like, oh, this is a research institution. Great.

[00:05:27] **Katherine Mathieson:** We've got researchers from the London Institute for Mathematical Sciences. They're on the second floor. They've got a lot of blackboards and chalk and very high powered computers, and they're doing maths and theoretical physics. And so for them it's a place to do original research on maths and theoretical physics.

[00:05:45] **Katherine Mathieson:** And then if you come in at about 10 o'clock in the morning you'll be in the, by the door with a load of really excitable young people from a school somewhere, probably in London, but sometimes further afield, and they'd come in to do a workshop in the Urenco Young Scientist centre.

[00:06:01] **Katherine Mathieson:** So they're really excited to be having a day trip and to be in the Royal Institution. And so for them it's a, it's an educational place. And a quite an unusual looking one maybe. 'cause it's quite, it's quite a posh building, quite an elegant building. And then, if you come in at seven o'clock in the evening that day, there'll be, I dunno, 300, 400 people there who've come to listen to a talk by a cutting edge researcher on some area of science.

[00:06:25] **Katherine Mathieson:** And we cover the full range. So for those people, they'll say, oh, it's a cultural venue. It is a place I go to in the evening, like the cinema or the theatre or whatever. 'Cause we do have a gorgeous theatre and then we host lots of external events as well. So people come in for meetings, conferences, receptions, launch events.

[00:06:43] **Katherine Mathieson:** For our members, it can feel like a place where it's part of their identity and part of their life. Some of our members, they're coming for the first time, especially

our family members, but some of our members have been coming for 50 years or 60 years, and they've seen it change over that time, and it feels very much a place where they feel at home.

[00:07:02] **Katherine Mathieson:** So for them, it's part of their family, maybe part of their family history. And then there's loads more on top of that. If you come on a Saturday afternoon, then we might be doing a show in the theatre where we're like, we've turned all the smoke alarms off and we're blowing things up, like extravagantly in the theatre or in any part of the building really. We love a bit of that. We're doing some kind of, our favorite demonstrations kind of show. So a huge range of activities going on in the building every single day of the week, which is really exciting. And so it's a, it is a science centre to some of our visitors. Yeah. But there's lots of other things as well.

[00:07:35] **Sarah McLusky:** Yeah. Really defies definition, doesn't it? And it is fantastic. I didn't realise you still had research going on on the premises, which is fantastic. Real original research, because that goes back, I. That really fits in with the history of the building, doesn't it? Yeah. So I was having a bit of a look before we came on the call and I knew it was old and I knew it was associated with all of these big names in science history, but I didn't realise it was, went back quite as far as it did. So will you tell us a bit about the history of the building.

[00:08:09] **Katherine Mathieson:** So the building was purchased in 1799 to be a home for science, and it would've been a a kind of a Georgian townhouse for a wealthy gentleman at that time.

[00:08:21] **Katherine Mathieson:** And and it came up for sale and the the founders of the Royal Institution bought it and set about turning it into this kind of place for science, a home for science. And the first thing they did, the first thing they started building within that new building was was a theatre. Because for them it was unthinkable that you could do, you couldn't really do science even at that point, even it wasn't a professional activity. What you were doing was natural philosophy. And those natural philosophers that were saying what we need is a theatre because this is how, this is what we want this place to be.

[00:08:54] **Katherine Mathieson:** It's about communication with public audiences, including audiences who wouldn't have been able to access science through other institutions at that time. It was quite a kind of closed off activity. And building, building a theatre before you've even started building your laboratory, it says something about the ethos of the organisation.

[00:09:12] **Katherine Mathieson:** And one of the things that's very special about the building is that we've been doing the same kinds of activities on, in the same building, on the same spot for 226 years now. And there's still as much of a demand as there ever was to come and meet scientists and find out what they're working on. And the science has changed unbelievably, it's almost unrecognizable.

[00:09:34] **Katherine Mathieson:** But the act of, of communicating with scientists as public audience has not changed. And so for some of the people who come through that front door of the Royal Institution, it's not a science centre, it's not a research institution, it's a museum.

[00:09:46] **Katherine Mathieson:** Because we've got all these amazing objects and stories from the people who've worked at the Royal Institution as researchers and over the 226 years. People like especially let's say Humphrey Davy who discovered 10 different elements. While he was working at the rural institution in between exploding things, he was big fan of that. People like

Michael Faraday who have revolutionized the modern world, his understanding of electromagnetism has absolutely paved the way for the world that we live in today.

[00:10:17] **Katherine Mathieson:** And his laboratory is still in the building, you can come and see it. You can see the tables he worked on. You can see the equipment he used. You can see these ridiculously gigantic batteries that he had to use in order to generate his electromagnetic fields. You can see the solutions that were, that he made up. Some of, you know, they're still there in the glass vials. And and I think for people who are really really interested in the history of the modern world and how we got to this place that we're in now. Being able to come and look at that, look at those objects laid out in the way they would've been laid out in the 1800s in the same space. They haven't moved. I think we put them somewhere safe during World War ii, but apart from that, they've just been in that building this whole time. And we've, we've got these lovely panels up on the wall, talking about the research, and we've got some videos and we've got some explanations.

[00:11:04] **Katherine Mathieson:** So I think that it, the museum exhibitions? Mostly in the lower ground floor, but across in all parts of the building, really try and tell the story so that people feel part of that whole story, because that's. That's what it has always been. The stories have come from the people who've visited, lived, worked in the building, and so if you visit the building, you're part of the same story. You're part of that like really rich kind of thread that runs back to 1799.

[00:11:30] **Sarah McLusky:** Yeah. What an incredible space to be the custodian of essentially. Yeah. As I guess you are now safeguarding it, keeping it going for the current generations, but also safeguarding it for the future generations. And one thing that I think a lot of people, when they think of the royal institution, they will think of the Christmas Lectures.

[00:11:49] **Sarah McLusky:** It's almost inevitable that's one of the things that comes to mind. And when this episode comes out, it's, you're gonna be deep in Christmas lecture season, aren't you?

[00:11:58] **Katherine Mathieson:** Yeah, we are definitely deep in Christmas lectures planning, and it's. And it's a, it's a wonderful project to be part of. And this year is particularly special. Every year is special because every lecturer and topic is a bit different. We, you really get under the skin of a particular topic and how the lecturer sees that topic and what they're passionate about and what they want to pass on to the next generation. The Christmas lectures were started by Michael Faraday for a, what he called a juvenile audience, and we don't really use that term anymore. We tend to talk about teenagers, 12 to 17 year olds and their families.

[00:12:29] **Katherine Mathieson:** And so I think for the lecturer, it's an amazing opportunity to say what they want to say about their subjects. It doesn't matter about the curriculum, it doesn't matter about, it just matters what they want to say, what they want to pass on, as it were to the next generation. So it's a real joy, but this year is especially special because it is 200 years since

[00:12:45] **Sarah McLusky:** goodness

[00:12:45] **Katherine Mathieson:** the Christmas lectures were founded. Yeah. Michael Faraday, he had a very busy 1825, Sarah, because he started the Christmas lectures and he also started a program of Friday evening discourses which were announcement lectures. So when people have made a a great discovery, they discovered the electron, or they want, they discovered how to record, sound, and play it back.

[00:13:08] **Katherine Mathieson:** Or they discovered how to take photographs or whatever it was, they would announce this to a public audience using a discourse, an invited discourse, and we still run that program today. So that's two of Michael Faraday's programmes that are still running 200 years later, which is really exciting. And he also, in addition to doing that, he just casually discovered benzene. So I said just

[00:13:28] **Sarah McLusky:** all in a day's work.

[00:13:29] **Katherine Mathieson:** Very industrious. He did work really hard, actually. He was very hardworking, but and also brilliant. So that combination is great, but he cared as much about the communication as about the discoveries. So it wasn't and that's true of a lot of the researchers who work were, have worked with us over the years.

[00:13:43] **Katherine Mathieson:** Both the ones that have lived and worked in the building, but also the ones who come to us for things like the Christmas lectures. That the communication part of it is absolutely key. So what they want to achieve in their lives in the Christmas lectures helps us do that.

[00:13:55] **Katherine Mathieson:** Now we keep all the content top secret, right? So that when it

[00:13:59] **Sarah McLusky:** Do we even, are you allowed to say, do you know who the speaker is yet?

[00:14:02] **Katherine Mathieson:** I can tell you who the speaker is. We're really delighted. So this year we are working with Maggie Aderin-Pocock who is a space scientist.

[00:14:11] **Katherine Mathieson:** Yeah. Yeah. And you might know her from Sky at Night . Or she does loads of work of school visits as well.

[00:14:16] **Sarah McLusky:** Yes.

[00:14:16] **Katherine Mathieson:** So lots of young people have seen her talk and she's totally inspirational. And she's an absolute joy to work with because she's she's as excited as we are, which is great.

[00:14:26] **Katherine Mathieson:** Yeah. So it's the 200th birthday of the Christmas lectures. Fantastic. This year we're gonna be talking about. Space science and and we wanna talk a little bit about I say we, Maggie and we'll have lots of guest lecturers as well, Sarah. So we try and invite people who are, working on particular projects.

[00:14:41] **Katherine Mathieson:** That'll be quite exciting to come in, if we want to cover that project or that technology or that invention, we might see if we could invite them in to tell us themselves. So we have quite a lot of guest lecturers and that's a nice way for us to showcase a wide range of science and technology careers.

[00:14:57] **Katherine Mathieson:** Which I think is particularly important for that age group, teenagers and their families. It's really helpful to say well, you know, maybe you want to do some A levels and do a degree and do a PhD, you know, obviously that's fun. But there are lots and lots of other careers as well. Yeah. Where you don't follow that route and you don't need to be top of your class in a subject, and all this kind of so yeah. And I think we want to particularly focus on space technology. So now I'm gonna, I can't spill any secrets 'cause I'll be in so much trouble, Sarah. I guess you'll have to wait until the end of December to watch the lectures.

[00:15:31] **Katherine Mathieson:** But we want to make sure that we don't say, oh, astronomy well we know all this cool stuff. This is how the universe is. Isn't that nice? We want to say a little bit, Maggie wants to say a bit about how do we know that? How do we come to understand the universe the way it is?

[00:15:46] **Katherine Mathieson:** What's the technology that enabled us to see that? Because one of the things one of the things I've noticed about astronomy is that the projects are big now. If you want to build a new telescope, it's probably going to take 20 years and then another 20 years for a mission to get it to where it needs to be to do its job.

[00:16:05] **Katherine Mathieson:** So you are creating equipment for the next generation of astronomers.

[00:16:08] **Sarah McLusky:** Yeah.

[00:16:08] **Katherine Mathieson:** To use and you are using the ones that you know, you do, you worked on maybe the instruments you worked on at the very beginning of your career. And Maggie has worked on some amazing kind of missions. She's worked on James Webb Space Telescope, so I am hoping we might be able to cover that. There's a lot of scripting going on right now.

[00:16:26] **Sarah McLusky:** I bet there is. I bet there is. Yeah.

[00:16:27] **Katherine Mathieson:** Yeah. But we'd like to showcase some of the kind of cutting edge of where the mission planning is going and what the future of that will be. Because I hope that some of the young people or or others who watch the, these programmes on the BBC, on BBC Four will say, oh, there's a place for me in that industry, in that sector.

[00:16:45] **Katherine Mathieson:** That I could, that could be the thing I want to do. Because we just love it when that happens, when we get a Christmas lecturer who themselves watched the Christmas lectures back in the day and found them really inspiring. So I'm hopeful about that. But yeah, it's, who knows what's gonna make it in Sarah 'cause it's all a bit of a flurry at the moment. The other thing we're doing is we're testing out lots of demos, yes, we do loads of demos in the Christmas lectures as part of the kind of USP. And so there's a lot of there's a lot of odd bangs going on in the back room, frankly about, so we'll see what happens.

[00:17:13] **Sarah McLusky:** But like you say, I'm sure that Michael Faraday and the previous inhabitants of the building would be delighted to know that sort of thing is still going on, yeah, we look forward to seeing and hearing more about that as it all becomes public knowledge later in December.

[00:17:29] **Sarah McLusky:** So bringing it back then to you. How did you get into doing this kind of work? What's been your career journey? Tell us a little bit about that.

[00:17:40] **Katherine Mathieson:** Sure. Well, I was really, really lucky. That's the first thing to say in that I knew very early I think that I really loved science. But I didn't want to be a scientist.

[00:17:48] **Katherine Mathieson:** And I didn't know what the rest of that sentence was, but I was very sure about that sentence from quite early on. That a kind of career in scientific research would've been, it's, it's, you have to be really focused on one topic for a long time. And I'm a bit too flighty for that, and so I was, I knew I was looking for something else. And I was, and I went to university and I did a degree in science, which I really enjoyed. And then I went to work for a

pharmaceutical company for a couple of years which I didn't enjoy quite so much, but it did, some of the skills that gave me have been incredibly useful.

[00:18:21] **Katherine Mathieson:** And then a friend got in touch and said, oh, I've seen this this course, Imperial College London, called Science Communication. And my friend said, I think it's got your name on it. And I was like, yes, it's got my name on it. And I was very lucky and I applied to do that. Master's course. Taught Masters, and.

[00:18:39] **Sarah McLusky:** That must be one of the first cohorts of that.

[00:18:43] **Katherine Mathieson:** Yes. Yes. Without wishing to Yeah.

[00:18:45] **Sarah McLusky:** Sorry if I've given, I, sorry if I've given away.

[00:18:48] **Katherine Mathieson:** Yeah. We're talking about the late nineties. Yes. Know it was an era. Yes. And so it was one of the first cohorts of that course, which is still running.

[00:18:56] **Katherine Mathieson:** And a couple of months ago actually, I went to give a talk to the new intake in that course which just feels like the most incredible privilege actually. 'cause I can tell 'em, I can tell all these amazing talented science communicators who are gonna revolutionize our sector. I'm like, oh, this course changed my life.

[00:19:11] **Katherine Mathieson:** And it really did. And they look at me like, oh, 'cause you're quite nervous when you start something like that, aren't you? But it was an amazing course and it really opened my eyes to the things, to what science communication is and how you can think about it and the different kinds of careers that could come into the umbrella of science communication. And I, during that course, I started volunteering with a charity called Science Line. So this was a helpline for people with science questions. And which probably wouldn't really exist now. 'cause you,

[00:19:39] **Sarah McLusky:** I suppose you've got Google. It's like this is like prototype. Yeah. Yeah.

[00:19:44] **Katherine Mathieson:** This was before Google, right? Yeah. Late nineties. There's no Google, there's definitely no ChatGPT, right? Yeah. People. And people still made phone calls and they would call up and they would say, why is the sky blue? Or, how do we know how big the universe is? Or what, where do the, what are the tides, what are they or why

[00:20:01] **Sarah McLusky:** There's something there's something so wholesome about that.

[00:20:03] **Katherine Mathieson:** Yeah, it was very wholesome. Some of the questions were bonkers, but the thing that I started to find really interesting was like, how have you come to have this question? What's prompted you to be so interested, so curious to find a phone number and phone somebody and have a conversation about it. And and I really enjoyed that experience. And we developed some family workshops and we took them based on the questions that people had asked, and we took them out on the road and we went to kind of town centres and shopping centres and places where people were anyway, and did these kind of shows.

[00:20:34] **Katherine Mathieson:** And I can see a real, a strong thread. I've done lots of other sort of jobs in the interim. But I can see a direct thread between listening to those questions and having those conversations, doing their shows, and then the kind of job that I do now. Which is about recognizing that some people do are interested in science and would they, they're not

science, they're not scientists. Maybe they haven't got any. They might not have professional qualifications or professional membership or a job in science, but they are interested in science as cultural activity and they want to participate and let's find ways for them to do that. And at the Royal Institution, we have this range of ways that people can be connected to science and feel involved and meet scientists and do all those things.

[00:21:13] **Katherine Mathieson:** And the roles I had in between taught me lots of other interesting things. So I worked for a while in a government, the forensic science service, right? Yeah. Which is our most, but was part of the civil servant. So that was a really interesting exercise in working very closely with research scientists. And trying to support them. I worked for a funding body for a while, Sarah, which made me feel extremely popular.

[00:21:34] **Sarah McLusky:** I bet it did. Everybody's best friend.

[00:21:36] **Katherine Mathieson:** I was. Yeah. It was a shock when that I stepped out of that job and realised it wasn't me, it was my funding pot that was popular. But that was great in terms of meeting loads of people, had great ideas and we're really excited about the future.

[00:21:48] **Katherine Mathieson:** And sometimes I think about that era. Because sometimes it feels, you can feel despondent about the world. Very easy at the moment. Yeah. And actually the things that change the world are come from people. They come from the ideas and the interactions that people have. And and I loved that kind of energy, that optimism that came from that kind of period. And then I spent a long time longer than I ever would've thought possible 'cause I was having so much fun, Sarah, at the British Science Association. Yeah. Which does loads of great science engagement work, particularly with audiences who wouldn't step forward if you said the word science. So particularly trying to find ways to help more people feel empowered to participate in science, even if it's not what they would've thought of as their thing.

[00:22:30] **Sarah McLusky:** Yeah. And it was when you were at the British Science Association that you moved more from. Doing just 'cause I know this just 'cause that's where I know you from, from the kind of doing the science communication more into the management, the leadership roles, wasn't it? Yeah,

[00:22:43] **Katherine Mathieson:** Yeah. That's right. So that's often, I think an inflection point for people in a science communication career is, do you want to, do you love the thing that you are doing?

[00:22:52] **Katherine Mathieson:** 'Cause often science communication people got into it because they just love doing it. They like talking about science and calling it a job. And, and if you want to, if you want to get promoted and get more senior roles, you need, you end up doing less of that stuff. That's what you really loved in the first place.

[00:23:07] **Katherine Mathieson:** And there's a real inflection point for a lot of people. And sometimes people go take, take one route and then decide it was the wrong one and then go back to the other path or whatever. Sometimes it's not a binary choice. Sometimes you do we have careers, careers are long, right?

[00:23:21] **Katherine Mathieson:** So you can do, spend 10 years. Following one route and then do 10 years on others.

[00:23:24] **Sarah McLusky:** That's true.

[00:23:25] **Katherine Mathieson:** Yeah. So there's no right or wrong answer even for an individual, but I found that I did really enjoy managing teams, managing projects, thinking about the fit between what's the project or program doing and what's the wider environment.

[00:23:38] **Katherine Mathieson:** And what does that wider context need and getting very involved in. When we worked together, Sarah, we were thinking a lot, weren't we, about extracurricular opportunities for young people based around science, technology, and engineering, and about how to properly organize that so that teachers and young people can make the most of it.

[00:23:55] **Katherine Mathieson:** And I've, I found I quite enjoyed that sort of thinking about that rather than just doing the delivery. But I do miss a bit of the delivery.

[00:24:03] **Sarah McLusky:** It sounds like you get into the theatre and, get your hands dirty a little bit. So yeah, you still got a little, that, that side of things is still there. Yeah,

[00:24:11] **Katherine Mathieson:** I do. I get a bit of that and I sometimes I come up with ideas first. Oh, we could do this, and my colleagues bless them. They're like, yeah. And then I go, it, okay, we'll do your ideas. Your ideas are basement. Just can't help it though. Obviously it's.

[00:24:27] **Sarah McLusky:** Oh, so it's interesting you said though, that you've done a talk recently to young people who are, or maybe not young people, actually maybe older people, but who've gone to do that Master's in science communication.

[00:24:37] **Sarah McLusky:** And I think certainly the world of science communication, both you and I came into it about the same time is very different now and careers opportunities and things like that. What do you think are either, either the biggest challenges you faced or the sort of challenges that you think people are facing now?

[00:24:55] **Katherine Mathieson:** I think in terms of challenges for science communication, one of the biggest ones is the pace of change in the digital world. So the ways in which digital platforms and digital audiences are co-evolving very rapidly. So splintering of different platforms, like we all learned how to use Twitter and now it's unusable.

[00:25:11] **Katherine Mathieson:** Or a lot of audiences on TikTok are only on TikTok, so if you're not on TikTok, you don't, there's huge swathes of the population you're just never reaching. And this retreat from platforms that most people shared into smaller groups, maybe focused around newsletters or maybe focused around I dunno, game streaming platforms.

[00:25:31] **Katherine Mathieson:** The online world is really splintering into smaller and smaller groups and that makes it much harder to find audiences and to build relationships with them. And I think that's a real challenge that if you're a science communicator now you need to be across all of that.

[00:25:46] **Katherine Mathieson:** Yeah. I, ideally with experience of making content on different platforms to different audiences I think it, I think when I was thinking about science communication back in the late nineties, I was like I could do, maybe I'll do museums or I could be a journalist, or I could do extracurricular work with young people.

[00:26:06] **Katherine Mathieson:** And there was these pathways, you just chose one and you went down it. And now that's much less common. It's much more common to be across a wide range of formats. And with experience of lots of different audiences. And I think that's, in terms

of career planning, that's harder 'cause you need to try and pick up all these different skills at the same time in different ways.

[00:26:25] **Katherine Mathieson:** So I think the career paths are less clear cut actually, although there's more of them in a way and they're more blurred. And I think in terms of the world that we are in the decline in trusted institutions, which I don't necessarily think is a bad thing, blind trust in institutions is not where we were I would like us to be.

[00:26:43] **Katherine Mathieson:** But the loss of trust in institutions in general and the way that's affecting science and the way that science is becoming, particularly at the moment, and particularly in the US becoming politicised, I think is a, is going to be a huge challenge for all of us who care about science. And care about getting the best out of science for the future of humanity. If that's not too grandiose, but all of us who care about that are gonna have to grapple with this challenge. I have no idea how we're gonna do that.

[00:27:11] **Sarah McLusky:** No, I often hear people saying we need science communicators more than ever. And I think on the one hand that's true, but also as you say tackling the misinformation, the disinformation the, as you say, the splintering and how you actually connect with the people who need to hear that information. And I think the mistrust in organisations means that people are often less inclined to, to listen.

[00:27:41] **Sarah McLusky:** And all of that just presents huge challenges for not just, there's the factual element of it is one side of things, but also, as you say just the joy of it. You that's something that's really come through in how you're talking is these things, how do you make it fun rather than just, I think this and what you think is wrong.

[00:28:03] **Sarah McLusky:** So yeah. And often that I often think that's the secret to how you open the door, isn't it to start having these conversations?

[00:28:12] **Katherine Mathieson:** Yeah, I think that's absolutely right. And I think one of the things I think I've noticed in the UK sector at least is that that we talk less about science communication than we used to. And we talk a bit more about public engagement with science or public engagement with research. And that's partly I think because of the rise of the discipline and the practice in the university sector which I think is a good thing just to be clear, I think having public engagement teams in universities is great. Let's do that. I don't want to take anything away from that

[00:28:43] **Katherine Mathieson:** But I think that approach, which is often about, so it might be about work with local audiences. Or it might be work, working with particular research topics or, citizen science groups, or being a good civic citizen as a university. So being a good employer, being a good neighbor, being a good, being a, a place that students want to apply to, so like recruitment agenda, the agendas that are very real and very important in universities public engagement with research work has to tie into those agendas. And that's completely right.

[00:29:13] **Katherine Mathieson:** Often they are about the research sector and how that's leading it or about a local, regional kind of place-based agenda. And they, that's all great. But I think science communication has a slightly different set of agendas and topics of drivers and they have been a bit just been on the wane in, I think with this rise in public engagement with research. And I think we might be losing out, particularly when it comes to doing science communication for awe and wonder and joy in our audiences. The kind of as opposed to doing

science communication because you want people to have an informed idea to be an informed citizen, to make informed decisions about their everyday life.

[00:29:50] **Katherine Mathieson:** That's really important motivation for science communication. Absolutely. Sometimes we are thinking about decision making at a societal level. That's a really important motivation for science communication completely. Sometimes we want to a broader and more diverse group of young people to consider science careers.

[00:30:07] **Katherine Mathieson:** That's a really good motivation. They're all really good motivations. Awe and wonder and joy, I think is a motivation all by itself, with just as much value and importance as all the other motivations. But I think it gets a bit downgraded 'cause it sounds a bit fluffy. Oh, you just wanna make a great like TV programme, like we're trying to do vaccinations over here,

[00:30:29] **Sarah McLusky:** yeah. Or also you just can't, you can't measure it. I think that's where some of these things get it's could you tell us your level of awe on a scale of one to 10, please? So that we can write a report and justify our existence. And as you say the, I think a lot of the research engagement and impact agenda has done a lot to make research better, make universities, like you say, accountable to the local communities and things like that. So I think that's all been good. But I do think as one of my previous guests Orla Kelly said, you don't make a pig fat by weighing it. And we just spend so much time measuring and quantifying and justifying that I think we do lose that sense of awe and wonder. Yeah.

[00:31:16] **Katherine Mathieson:** I think often the awe and wonder is the bedrock from which trust is developed.

[00:31:21] **Katherine Mathieson:** Like when people watch David Attenborough on the TV they're watching for the emotional impact. Yeah. Some people are memorizing wildebeest facts maybe, but it's the emotion. It's not about education, it's not about learning per se. It's about sharing with Attenborough the awe and wonder of the natural world. And that is a really human experience.

[00:31:43] **Katherine Mathieson:** And you get that with, you're lying on top of a hill in the middle of the night with an astronomer looking up at the sky, learning about what's that?

[00:31:51] **Katherine Mathieson:** There are lots of ways of generating these experiences of awe and wonder, and I think that, that is what brings us together as human beings who participate in science, and that's what positions science as a shared endeavour. Something that we're all engaged with. And that is a great basis from which to support people to make informed decisions on vaccination or encourage young people to study science for longer. Or, engage in a debate about wind farm, where it's gonna go or whatever it is but without that, without those shared human experiences that kind of bedrock for building trust, I think all of the other stuff is much harder.

[00:32:26] **Sarah McLusky:** Yeah.

[00:32:26] **Katherine Mathieson:** So I think that awe and wonder is as important as all of the other motivations and doesn't always get as much of the kind of attention or resource.

[00:32:36] **Sarah McLusky:** Yes. Yeah. Oh well, a little bit more of that would be good. Well, I, I do like to ask my guests may, I feel like almost like I've led here, so you're very welcome to

choose something different if you want to, but I like to invite my guests to wave a magic wand and change something about the world that they work in.

[00:32:52] **Sarah McLusky:** So it doesn't have to relate to what we've just said, but it can of you want but yeah, what would you do with your magic wand?

[00:32:58] **Katherine Mathieson:** I think the challenges that feel very spiky to me at the moment are around resource, money. Mostly money, sometimes time, but mostly money, resource and equity.

[00:33:13] **Katherine Mathieson:** So I think, I know you only said one thing, but I'm gonna change two things. I would like a more equitable society world and I would like more resource. I think the, one of the reasons why the world feels a bit like a despondent place at the moment is that there just doesn't seem to be enough resource, time or money around to do all the things that are important and I don't know how we got to that place. There isn't less time and there isn't objectively less money really. Yeah. But it feels like it.

[00:33:41] **Sarah McLusky:** Why does it feel that way? I don't know. I think partly the pace of life has really sped up, hasn't it? So that means there's almost like this expectation of you should be able to do more. It's always like more, more, do more, do more, do more, more people, more. And it also, because I think now we've got that awareness of where we sit in a global pool, a global situation that you're always aware that you could be doing more.

[00:34:09] **Sarah McLusky:** You know, It just never quite anything never quite feels like enough. Yeah. Yeah, that sounds a very good use of the magic wand. So

[00:34:18] **Katherine Mathieson:** Thank you for letting me borrow it, Sarah. I'm looking forward to the future now.

[00:34:24] **Sarah McLusky:** Oh, thank you so much, Katherine, for coming along and sharing your story. I, yeah, this is one of those things I feel like I could talk to you about the nuance of science communication for hours, but the listeners might not be quite so keen on listening to that.

[00:34:38] **Sarah McLusky:** And if people want to find out more about you or the work they do, where is a good place to direct them?

[00:34:44] **Katherine Mathieson:** So well, I am very happy to talk about science communication with everybody because I just, it's my passion. And I'm very happy to talk about the Royal Institution with everyone as well. There's lots of info on the website rigb.org and you can find me either through the website or on LinkedIn.

[00:35:00] **Sarah McLusky:** Yeah, you're very active on LinkedIn, aren't you? Yep. I'll get those links and put them in the show notes. So thank you so much. It has been lovely to catch up and thanks for giving so much of your time, and clearly there's a lot going on in your working life.

[00:35:15] **Katherine Mathieson:** It's been great talking to you, Sarah. Thanks so much for the invitation.

[00:35:19] **Sarah McLusky:** Thanks for listening to Research Adjacent. If you're listening in a podcast app, please check your subscribed and then use the links in the episode description to find full show notes and to follow the podcast on LinkedIn or Instagram. You can also find all the links and other episodes at www.researchadjacent.com.

[00:35:36] **Sarah McLusky:** Research Adjacent is presented and produced by Sarah McLusky, and the theme music is by Lemon Music Studios on Pixabay and you, yes you, get a big gold star for listening right to the end. See you next time.