

00;00;02;01 - 00;00;23;16

Clare

Hello and welcome. I'm Clare and you're listening to Microbe Talk - the podcast by the Microbiology Society. This month I had the pleasure of speaking to one of our members, Jake Robinson, about his experiences writing his first book, Invisible Friends. Just a quick note to the listener. We recorded this podcast over a Zoom call so apologies for any deviations in quality of the audio.

00;00;24;28 - 00;00;28;06

Clare

Thank you so much for coming along. It's really lovely to speak to.

00;00;28;10 - 00;00;29;04

Jake

Thanks for having me on.

00;00;29;14 - 00;00;50;07

Clare

Yeah, yeah, really lovely. And so we're kind of here to discuss your book and it was really great that I was able to get hold of a copy and give it a little read. It's a massive book, it's really big, so it's great to have a little read through. And I think that this could be something really popular. I suppose the listeners, everybody, if you could introduce yourself.

00;00;50;07 - 00;01;12;07

Jake

Yeah, sure. So, yeah, my name's Jake Robinson and microbial ecologist most of my work. My current work focuses on exploring the relationship between the environment, the microbiome and human health, and how we can potentially restore our natural environments in order to restore human health. And so I did a Ph.D. at the University of Sheffield, which I finished a couple of years ago, a year and a half ago.

00;01;12;21 - 00;01;21;22

Jake

And and yeah, I wrote this book called Invisible Friends in the last year of my Ph.D. and it sort of joins together all the topics that I studied in my PhD, plus lots of other things as well.

00;01;21;22 - 00;01;34;23

Clare

And yeah, amazing. I mean, I literally have it written down here. You just finish your Ph.D., I would have had a bit of a break. I just treated myself to a bit of quiet time. Yeah. What made you kind of go "No. I'm writing a book

00;01;35;29 - 00;01;58;15

Jake

Well, I think I was inspired. I think I've always been interested in writing, to be honest. And. And I'd wrote quite a few papers doing the PhD and kind of got the bug for writing, so kind of bringing all these different ideas together and then writing a book that seemed quite natural, I suppose. And that was really what inspired me to just kind of love of writing and wanted to share these interesting topics.

00;01;58;26 - 00;02;11;02

Clare

That's really lovely. I think especially kind of in schools and stuff like that, you have this kind of concept of you're either creative or you do. STEM and it's very difficult to find this kind of blend in between.

00;02;11;03 - 00;02;17;05

Jake

Yeah, it's interesting in that it's like this this service, this war, this, this arts versus sciences, which I think it's a bit silly, but.

00;02;17;19 - 00;02;18;13

Clare

Yeah, I think we.

00;02;18;13 - 00;02;19;03

Jake

We can do both!

00;02;19;04 - 00;02;31;28

Clare

Exactly. Exactly. It's interesting you say that, because that brings me on to my next question. There are some lovely little illustrations in there that I think you said previously on an email that you'd done yourself. Yeah. What was the process of that like?

00;02;33;04 - 00;02;59;13

Jake

Again, I guess with some of the papers I published in my PhD I wanted to make the papers less dry, so I started learning how to do graphic design as well as to try and produce some more engaging illustrations with the papers. So I think that's again, that's just an extension of that, trying to make some of the complex topics a bit more understandable through visuals and, and yeah, I'm not, I'm not a very great artist or anything, but it was quite a nice process to draw some of the topics out.

00;02;59;18 - 00;03;13;16

Clare

Yeah, I think quite often a picture can do things that you just writing just can't do.. Yeah... Don't bring yourself down. I love those pictures that great. They're way better than I would do! So don't bring yourself down there.

00;03;14;08 - 00;03;14;18

Jake

Laughs

00;03;14;26 - 00;03;38;23

Clare

They're fabulous. Thanks. And so I suppose kind of the central sort of topic, the focus of this book is this concept of what it's literally called invisible Friends, is this concept of why? Why are we so freaked out by microbes? Why did I get this like, bad rep? What is your kind of big answer to that? Is that, you know, there are kids thinking that the germs are going to make me sick.

00;03;39;27 - 00;03;41;10

Clare

What's your response to that?

00;03;42;05 - 00;04;06;10

Jake

Well, I think I grew up thinking that as well. To be honest. Like, it's this been ingrained in society for so long over the past 150 years or something since me, you know, since germ theory was then formulated that microbes, the things that cause diseases and obviously a few of them do, but most of them don't in humans, and most of them are either harmless or they play a really fundamental role in our health and wellbeing.

00;04;07;27 - 00;04;35;26

Jake

And yeah, I started studying, so I got into microbe ecology through parasitology. So I started looking at how ticks parasitized hedgehogs and then how it affects the hedgehogs behaviour. And then I started learning about that and the microbes that ticks could transmit and also pick up from the hedgehogs and then some of these caused zoonotic diseases. And so I kind of learn and about, I suppose, my specialism was looking at kind of looking at how and microbes cause disease.

00;04;35;26 - 00;05;04;02

Jake

And then I wanted to explore more. I sort of started learning about the symbiosis. The mostly parasitism is a form of symbiosis and then started learning about other forms of symbiosis as well. And, you know, mutualistic symbiosis. How two different organisms can live in close association and benefit each other? And I think from this learning about mutualistic symbiosis, I kind of thought, well, there must be loads of examples out there in nature where microbes are mutualistically advantageous in the in the relationship.

00;05;04;09 - 00;05;25;26

Jake

My focus led from there really like learning about the different forms of - other than parasitic symbiosis there are many of the forms of symbioses and many of them benefit us as humans, but also our wider ecosystems. And and yes, the book led from there, to try and turn this negative and demonizing conception of microbes on its head really.

00;05;25;27 - 00;05;31;06

Jake

And this displays some of the weird and wonderful but beneficial roles that it pays off.

00;05;31;07 - 00;05;48;25

Clare

Yeah, I can't go a few days without the microbiome being in the news at the moment. In fact, it's quite a popular topic. Yeah, so I think it's going towards the right direction and books like this will definitely help... In that kind of that vein, I mean, who is your sort of ideal audience for this book?

00;05;49;01 - 00;06;08;13

Jake

Yes. So I wanted it to be quite a broad audience that read it. So it could be interesting to scientists, but also just people that are curious minded non-scientists as well. And so I was trying to aim for that kind of midrange of complexity so that so that scientists all also non-scientists then could enjoy it as well. I think that was what I was aiming for.

00;06;08;26 - 00;06;26;18

Clare

Yeah, yeah, No. And I think sometimes when you think about sort of science books and things, you know, the average reader who perhaps isn't very sciencey, well, that's too intense to me. Yeah. Actually what it is, is a collection of ideas, and it's a collection of sort of like thought processes. And you don't have to be a microbiologist to kind of join those dots.

00;06;26;18 - 00;06;43;02

Clare

And I think you do that really well, which I did really enjoy. Perhaps maybe a bit more of a general question now is what do you think the role of sort of like popular science books like the one that you've written, what do you think that sort of role is within sort of science as itself in the perception of science?

00;06;43;09 - 00;07;03;02

Jake

Um, well, for me personally, I find it quite, quite inspiring. So a lot of the ideas in the book that I wrote from and the ideas some of the popular science books that triggered thoughts. I see it as this kind of ecology of mind, you know, learning from other people's ideas. Then constantly inside it also triggers inspiration for your own ideas.

00;07;03;12 - 00;07;16;24

Jake

So I think they really, I think, popular science books. I think they're important for stimulating ideas. And if you can read outside your sort of general topic of interest as well, then you can learn a lot more and diversify your ideas.

00;07;16;24 - 00;07;41;14

Clare

And it yeah, it's so interesting you say that because like collaboration is, is science in itself that is supposed to be the backbone of it. And then it's quite often you see, you know, different disciplines borrowing from each. Yeah. Which is really nice to see. And I hadn't made that connection! For a lot of people, kind of the I think the public perception I suppose of scientists is that they know absolutely everything there is to know about science.

00;07;41;25 - 00;07;52;15

Clare

But actually it's a lot about a very, very specific thing, a very specific little corner. So the benefit of scientists reading popular science books must be massive.

00;07;52;15 - 00;07;59;12

Jake

Yeah, I think so. And personally, yeah, I find them really inspiring again, especially if you read slightly outside your topic of into this.

00;07;59;12 - 00;08;16;11

Clare

So I loved the little kind of anecdote that was in there about like microbes replacing cows. I hadn't heard that before. That was really interesting to me. Is there any other kind of particular stories of interactions with microbes and how that can help us in the climate crisis? For example?

00;08;16;14 - 00;08;41;11

Jake

Um, yeah, that's interesting question. Well, so obviously microbes are really important in climate regulation itself, so scientists learning much more about how that happens is probably an important thing to study in terms of how to respond to climate change. Um, yeah, so for the cows milk one. So that's a really, I think it's quite thought provoking really. Um, I'm not sure exactly where I sit on that.

00;08;41;11 - 00;09;00;09

Jake

I find it really interesting and I want to reduce the impact of, you know, greenhouse gases, etc. So I'm, I'm not totally sure if I'd go for it, but it's, I find it really fascinating line of research to explore for sure and how it can reduce our microbes can be utilized and or partnered with to kind of reduce the impacts of climate change.

00;09;00;20 - 00;09;01;09

Clare

mmm.

00;09;01;25 - 00;09;24;18

Jake

Yeah, I think there are lots of other examples as a chapter in the book called how Microbes are the Glue that holds the ecosystems together, it is understanding this knowledge about how microbes hold our ecosystems together and fundamental to the functioning of our systems. I think exploring that is a really important research avenue, and some of the other things I'm exploring are is a concept called microbiome inspired green infrastructure.

00;09;24;27 - 00;09;57;27

Jake

And so this is, you know, is lots of their urban environments where we live and space and exposed to lots of pollutants and we reduce in the trees and the green spaces in our urban environments. It's not very good for our health. And so this this concept is all about trying to draw together microbial ecology in this space and see how see what role they play in this greening infrastructure and see how we can promote interactions between humans and the microbes in this green infrastructure that's not necessarily kind of has an indirect role in climate change because it's trying to promote biodiversity in our cities.

00;09;57;29 - 00;09;58;08

Clare

Yeah.

00;09;58;09 - 00;10;20;03

Jake

Yeah, and yeah, so I come about more from it, how it permits interactions between ourselves and microbes and how that benefits ourselves. And I think this, this plugs into the kind of broader planetary health paradigm. So, you know, to have healthy people, you need healthy environments and to have healthy environments, etc. it's like kind of two way reciprocity that's really important to look at.

00;10;20;03 - 00;10;30;01

Clare

Yeah, yeah, I know that that's a really, really valid point. I mean, quite often in these sort of situations and sort of new technologies proposed quite often.

00;10;30;01 - 00;10;30;23

Jake

Yeah, exactly.

00;10;30;28 - 00;10;49;00

Clare

How do you kind of feel, how do you think sort of sort of partnership with microbes fits into that? Do you think that there's perhaps like a balance that needs to be drawn or do you think that, you know, getting too excited and microbes, everything could that had never negative effects, do you think?

00;10;49;12 - 00;11;10;01

Jake

Yeah, I think I find if I see you personally, I'm an ecologist, decided I'd rather take firstly take a kind of more naturalistic approach. But I do think technologies have value and obviously we're in the modern world with and have lots of technologies and with moving forward with this. So I think they do play an important role and, and some of it is super exciting, right?

00;11;10;12 - 00;11;29;05

Jake

And I made a chapter that bio integrated design and some research is it that showing that some bacteria can generate electricity and so then they trying to take this this kind of natural technology and see if they can create batteries to power all sorts of devices and things. And this could end up being, you know, really sustainable way of generating energy.

00;11;29;07 - 00;11;42;23

Jake

Yeah. So this is really is really exciting that biotechnology world at the same time. Yeah. Is it just feel kind of conflicting being an ecologist suggests these. Yeah I think we like you say we do need to strike that balance as well it's great question if.

00;11;44;09 - 00;12;00;29

Clare

and I apologize if you touched that before, but there's lots of lovely anecdotes and things I've gone through in this book. Do you have a particular favourite that you are you're really excited by or that really surprised you?

00;12;01;00 - 00;12;27;26

Jake

Um, in the book, I find this psycho-biotic revolution and this kind of idea that microbes could be influencing our behaviour. I find that really, really interesting. Yeah. So I interviewed Professor John Cryan in Cork in Ireland on that. So he's that kind of the bigwig of this, like the psycho-biotic revolution, the kind of understanding the links between the microbiome in the gut and the brain, and the kind of two way communication system that links in together, I find that super interesting.

00;12;27;26 - 00;12;29;22

Jake

So that was really cool to write about.

00;12;29;22 - 00;12;30;02

Clare

Yeah.

00;12;30;06 - 00;12;50;01

Jake

Um, but yeah, just in general though, why evidence from microbial ecology in general, as I like to say, this phrase, this phrase, everything you can see in nature intimately depends on everything you can't see. So just when you look at plants and animals and I kind of look at it now as in your each one of these things I look at is as ecosystem.

00;12;50;01 - 00;12;55;20

Jake

It's a community. It's not just a single entity. I find that quite an yeah, inspiring to think about.

00;12;55;20 - 00;12;57;03

Clare

Quite mind boggling isn't it.

00;12;57;04 - 00;13;14;20

Jake

Yeah, quite mind boggling. Yeah. But yeah, it's just really inspiring as well to look at a tree and not just think of it as the above ground with the wood in the leaves, etc. this whole complex community on the ground that you can't see. And also within the trees, cells of the ground, it's just Yeah. It's quite beautiful to think about.

00;13;14;26 - 00;13;18;07

Clare

Yeah. Quite overwhelming as well as you as Yeah.

00;13;18;07 - 00;13;20;03

Jake

Overwhelming as well. In a good way.

00;13;20;21 - 00;13;32;04

Clare

How did you find, was it a completely different way of working, writing this book to doing. more, you know, traditional. I'm air quoting here, traditional scientific research. It was it how alike was it. Yeah.

00;13;32;10 - 00;14;02;11

Jake

Yeah. There I think the process is quite similar in terms of setting aside some time to focus. Um, but yeah, it's the writing style is obviously a lot different. So yeah, that does take a, does take quite a bit of refining and yeah, trying to provide that kind of journalistic writing style I suppose, as opposed to that quite dry science is something you normally see in papers and yeah, I think that's just again just try and write in blogs, these sorts of things, so do it in small chunks.

00;14;02;11 - 00;14;25;04

Jake

If you can write blogs about your research. Yeah, Yeah. So you know, 500 words, it's not, it's quite a bit maybe to start with, but eventually you'll get the hang of it. This write this, try writing more creative outputs blogs than articles with places like the conversation and that kind of stuff. And then eventually you'll get it all this fall in space that you'll become more of a journalistic style and then hopefully it'll become easier to write a book.

00;14;25;10 - 00;14;45;24

Clare

Yeah, Yeah. I think it would definitely get to inspire lots of scientists to, you know, pick up the reins and put me out of a job. Yeah. And I you mentioned that kind of about sort of popular science books. I

actually just wanted to ask you, is that do you have a favourite book that, you know, really inspired you to do this?

00;14;45;24 - 00;15;05;00

Jake

Yeah, it's weird, actually. The first thing comes to mind is a Robert Sapolsky book, even though it's nothing to do with microbiology and just I love his writing style and, and yeah, so he's he's written a recent book a few years ago called Behave and it's all about how and yeah it's all about human behaviour at our worst and our best moments.

00;15;05;09 - 00;15;24;23

Jake

And it talks a quite deeply about the neuroscience of it all. And but one of his books that really inspired me, it kind of changed my life and changed how I approach stressful situations. I read this maybe ten, 15 years ago. how Zebras don't get ulcers. And even the title I found was really cool.

00;15;24;24 - 00;15;25;07

Clare

Yeah.

00;15;25;22 - 00;15;49;19

Jake

Like what? And so I recommend reading that and I think he's done an updated version of it as well. It shouldn't be out-of-date, I think, but it's all about how this, you know, evolutionarily we've adapted and our systems have adapted to escape predation. Yes. And so our endocrine systems kick in and we've got this fight or flight response and but, but we're actually doing that in micro stressful moments at the moment.

00;15;49;19 - 00;16;21;29

Jake

So if you're stuck in traffic, if you're late for work, if you're, you know, kind of so this is smaller things on that shouldn't really be that significant in life. And but we're constantly triggering this this endocrine response, this hormonal response and which was made which developed in particularly to escape

predators, you know, and survive, etc.. And so it's the same once you recognize this, you can kind of teach yourself through neuroscience techniques how to and how to recognize these moments and not allow your body to react in such a reactive way.

00;16;22;11 - 00;16;38;18

Clare

Yeah, it's it's segues me on quite well to my next question, actually, I think about you said about this kind of changes you mind frame from reading this book is that what you're hoping to get from the readers of Invisible Friends?

00;16;39;02 - 00;17;12;04

Jake

And hopefully even some of them maybe just to as I say, I want to tip this negative section to my face completely on its head and just provide and kind of hopefully engage in an insightful and stories about how microbes are really important and how we should be respecting them despite all of the forms of life. And just to try and notice symbiosis everywhere, like I do now, is hopefully I hope that's it and it's a great message and change people's view on certain things and maybe change how we see and still see the unseen world.

00;17;12;20 - 00;17;15;16

Jake

That would be great. But who knows? We'll have to wait till the reviews?

00;17;15;25 - 00;17;28;08

Clare

And I suppose my, my I've asked a lot of other popular science books and I'm realizing I'm not quite doing my job here. Where can we get a hold of the book?

00;17;28;08 - 00;17;46;17

Jake

Yeah. So, yeah, so this is recorded just before is published. So is it is or it will be published on and it was released on March the seventh in the UK and it comes out a few weeks later in the US and it's available in Australia and other countries as well and you can buy it for pelagic. So that's the publisher.

00;17;46;17 - 00;17;59;16

Jake

So and Magic Publishing and Amazon or bookshop dot com. I think that's the festival because I think SD provides some money to independent bookstores just anywhere really on the internet. Hopefully it'll be in bookstores soon.

00;17;59;16 - 00;18;03;23

Clare

Yeah, I guess it's great to have you before it's getting really. How you feeling?

00;18;03;24 - 00;18;23;18

Jake

Yeah, I've been really excited, actually. And so it's been so... I'm finishing the book. The first draft of the book to get it published. It's been quite a long time. It's been with the publisher for well over a year. And so it goes through this process of, you know, sending out to copy editors and just getting a slightly more refined feedback from different people and then you work on it and refine it, etc..

00;18;23;20 - 00;18;35;17

Jake

Yeah, that process has taken like a year or something. So yeah, they say it's a way it's, it's kind of slowly built up, but it's also dragged on. But for now it's only a few days away. So yeah, it's super exciting can't wait/

00;18;35;27 - 00;18;48;11

Clare

Amazing, amazing. And you can then have that will be a great for Christmas this year because like everyone gets everybody. Yeah, yeah. That's definitely what I would do 100%. 100 said, Yeah.

00;18;48;23 - 00;18;50;05

Jake

My mum's like, well microbes?.

00;18;51;13 - 00;19;01;29

Clare

Yeah, fantastic. I'm yes, I mean I always ask at the end of any interviews there's anything that I didn't touch on that you want to add and make sure you get across now's your time!

00;19;02;14 - 00;19;08;25

Jake

Yeah, I think so. It's been very nice interview. What's, what's your favourite popular of Science book? Sorry I'm interviewing you now.

00;19;09;12 - 00;19;12;26

Clare

Now. Yeah. No, I love it. Have you heard of Angela Siani?

00;19;13;16 - 00;19;14;08

Jake

Urm no..

00;19;14;23 - 00;19;19;29

Clare

Oh, she wrote a book called Inferior. I would really recommend it, by the way.

00;19;20;12 - 00;19;24;27

Jake

I think I've heard of you, actually. Yeah, I think someone else is mentioned. It's me. I'll give it read. Sounds great.

00;19;25;03 - 00;19;38;09

Clare

Yeah, fantastic. But obviously lessons at home. You go to read Invisible Friends first. ... Yeah. It's been an absolute pleasure speaking to you. Thank you so much for taking the time to have a chat.

00;19;38;09 - 00;19;42;15

Jake

You too – thanks for interviewing me!

00;19;42;15 - 00;19;49;10

Clare

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