

Intro

From clinical microbiology at an army hospital.

“So I joined as a civilian.”

To later developing scientific expertise and leading a lab at institutes in the US and India.

“There are institutes in India that are so world class that when you move, almost like a lateral move.”

And finally, as executive director at India Bioscience, bridging the communication gap between scientists and clinicians.

“Really the mission and vision and mandate of India bioscience is to take science being done in our advanced institutes to the whole country.”

This is experienced scientist, doctor and science communicator doctor Karishma Kaushik. And the story of what can be possible when you bring people together. What does it take to make a career in science?

Great question, great question.

Career trajectory | What was your training in? How did you get to where you are today?

I don't want to reveal my age in the process of sharing this story, but, oh, no, you know how it is. Careers only get better with time. So in India we have a medical entrance exam. So I gave that exam and in India, any sort of seat, whether it's medicine or engineering, is a numbers game. You have 100,000 people applying for thousand vacant spots. So we get through that numbers game and that's how I got a position at the medical college in India. I would also say here that medical education in India is highly subsidised by the government. What we pay is, you know, a fraction of the fees and all the rest is put in by the government of India to train new cadres of medical doctors.

So after I finished my basic medical degree, it was time to think of a specialisation. And once again, in India, you enter a numbers game here now you have 10,000 people applying for 500 positions. It's difficult to say what you really want to do because you have what you get, really, it's what you score high enough to be able to make a claim to that position. So there I did get a subject that was clinical microbiology and I got it at a medical college, the Armed Forces Medical College, Pune in western India, which

actually trains doctors for the Indian army. I joined as a civilian. I didn't commission myself into the army at the time, or Indian army at the time joining.

So I did my residency in clinical microbiology from there. And that those three years were a tremendous learning curve, learning spurt. It was a world class institution and towards the end of that, I felt I need, I was looking for international exposure. That was also the time I met my husband and he was based in California. So post my residency, I moved to the United States. And people often ask me, what was it like? Because I moved from Pune to a short research stint at UC Berkeley. And I say that there are institutes in India that are so world class that when you move, it's almost like a flat move, it's almost like a lateral move. You know, you don't feel that you are now exposed to resources and infrastructure that you didn't have back in India. And AFMC to UC Berkeley, was that kind of a transition. Interestingly, at UC Berkeley, I took on a voluntary research position.

And for young people listening, you know, there's so much that goes into building a career. You never know what you will have to do to make use of an opportunity. At that time, you know, there was economic recession, there were challenges in visas for international researchers, took what I got. I made the most of one year of experience and applied to PhD positions. the vision was that we wanted to come back to India. So I thought going the PhD route versus re-qualifying as a medical doctor would make more sense. And then I got a PhD admit after two years of trying at UT Austin, and I did my PhD there in microbiology and molecular genetics, so. And I'm still only halfway through my career story. And now you are the executive director of India Biosciences.

India Bioscience | Can you tell us what is India Biosciences and why was it created?

Yes, that's a good question. So that's how I ended up here. so after I finished my PhD, I worked as a faculty at UT Austin. The vision was always, we wanted to come back to India. The Indian government has a programme called the Re-entry Fellowship, which allows Indian diaspora scientists out of India to apply and come back. I applied for it, I got it. So it was a fellowship supporting my research group and like fund for research, my salary position at a university or institute in India. So I returned to India in 2018 on this fellowship, and I ran my research group for five years at a university.

Like both of you, Sara and Sandra, I enjoyed research, but I enjoyed many things other than research, like communication, outreach, writing, education, reaching out to the community. I did a lot of that in the five years that I led a research group. As I was

wrapping up my five years, I gave myself the time. If it hasn't been evident from my stories so far, it was a very hectic decade in my career. You know, medical college, residency, moving to the US, moving back. Somewhere in the middle of all this, I also had a child, which now seems like a very minor commitment compared to everything else. But it was a hectic decade and I gave myself the time, after five years of running a research group, to say, what do I want to do?

Looking back, it's scary to think that you might want to do something else than you're already doing because you feel, do I have the skills for it? Do I have the training? What will I need to be able to get a job in that space? But I'm happy I gave myself that time. And then I realised, well, I could go on and publish and guide students and do what I'm doing and keep hustling for grants, or I could think bigger because I really value reaching out to the community. And I started looking for leadership role.

That's when India Bioscience came on the horizon. Coming to what India Bioscience is... India Bioscience is a science facilitation organisation initiated in 2009. So it's been more than 15 years and running. It is partly funded by the government of India and we also have external partnerships through which we support ourselves. It's a small team headquartered in Bangalore, India. But we work across India and we work across key areas that bridge science done in institutes, universities, or quote unquote ivory towers and the community. And the community could be early career researchers like you were mentioning. It could be science professionals, communicators, even public at large. And India bioscience is this bridge and we do this through networking in the life science community, mentorship for early career researchers, resources like webinars, podcasts, compendium workshops and trainings on what it takes to build a career in science.

Science careers beyond academic paths, grant writing workshops, research publication workshops. So we do it across several different areas of work. Really, the mission and vision and mandate of India bioscience is to take science being done in our advanced institutes to the whole country. And we do this through these many means. This is particular relevance to a country like India, which is not only very large geographically, but also very diverse demographically, linguistically and culturally. So it's a challenge in itself to be able to do this in India. It's also relevant because in India, almost all our research is funded by taxpayers money. We have a very small slice of private money or philanthropic money that supports our research. It is government of India money that funds. So it's all the more reason that organisations like India bioscience exist and do their work well, because we are taking money we are taking science funded on public money back to the community. So that's in a nutshell about India Bioscience. And right now I'm the executive director and I sort of overrun all the programmes and initiatives at

the organisation also build external partnerships, also put out our vision for life science research in India through interviews, as this, through columns, opinion pieces.

Career in science | Throughout your experiences, what does it take to make a career in science?

I will preface anything that I say. It comes with my own experiences or at my individual viewpoint. Maybe two things I will say. One is adaptability. I think we have to be able to seize opportunities that we may not have thought of ten years ago. Like I didn't even know India bioscience ten years ago, but now I'm in the thick of the organisation. When a good opportunity comes, we should be able to adapt sufficiently to be able to take it on. But I think even in that adaptation, the second thing I would say we need is, you know, we just need a sort of an insatiable drive. So I would say two things, adaptability and drive have sort of helped me navigate challenges such as geographic constraints. After a certain point in life, you do want to be in a particular city. at the same time you want a job that's challenging enough and then you want to be able to do good work and you want to be able to be paid well for that good work. And so the wants and the needs only increase. You know, it's, it's, it's no longer a job, but it starts to slowly become the job. And to get to that 'the job', adaptability and drive have helped.

Science communication | As a science communicator and in your work between bridging the gap, communication between like the general public and scientists, what are some challenges or that you've encountered along the way?

So most of us in science communication will admit, you know, that we have learned on the job and this is world over. There are very few formal training in science communication. Very few people have undergone that formal training and our scientists themselves.

What has sort of helped, when I when I co founded, talked to a scientist, which is a science outreach platform for young children in India, at one point it was weekly and now it's a little less in frequency. But scientists talk to young people in India. What has helped us to be very cognizant of the fact that we can't use jargon. What excites us, the details, the technical terms, would not excite somebody who doesn't have that level of training or insight into the science that you're doing. And it may actually put them off because if you don't understand something, you're not going to be hooked onto it. So maybe scientists need to work a little bit on thinking, why would I listen to this? Or if I'm

a life scientist, why would I listen to somebody talking about physics if I didn't understand anything beyond like a few catchy words?

So maybe reducing the jargon, reducing the technical aspects of it, but that's also hard because what scientists get excited about is that technical aspect, you know, not getting lost in how many microliters were put in what and how long it was shaken for, because that doesn't matter to somebody who's not trying to replicate your experiment for them, it's what happened after that. So maybe also thinking of it like a story, set some context, but then you get to the main part very quickly, through all the sessions we have done. I think that has, that has been. What strikes me as a clinician and also as a doctor when navigating this area where scientists and clinicians have to talk to each other, have to communicate with each other.

India's life science ecosystem | What were some of the communication barriers that you saw in your experiences?

So when things go well, usually they publish it, when things go wrong, we don't hear about it. But again, maybe the why, see, when I was a medical doctor - I don't practise anymore - but why would somebody want me to provide this clinical data or clinical material or why would you want me to collect this information? Maybe spending some time explaining that why and acknowledging that it's a lot of work for the medical doctor to do this in addition to treating and in addition to other things that sort of would help. I do know that during my residency I worked on a project on chicken pox in Indian soldiers because I was at an army medical college. And then also when they're providing you with samples, they also want to know what you're doing with it.

So spending some time talking through that with the medical doctor and then maybe, I think at least in India, we need more platforms that bring medical doctors and scientists on the same page. And this has been brainstormed a lot. Unfortunately we do not have too many. We don't. We have probably one or two MB PhD programmes in India. So medical doctors who are scientists have done it the way I have done it, finishing medical training and then embarking on scientific training, which is a good 15 years of training. We don't have, we don't have maybe one or two, but we don't have too many MD PhD programmes. So where do we find both both sets of professionals on the same page. It's difficult, it's a challenge.

The other challenge is that in India, we have a very stretched and overstretched medical system, where when you have a very large patient volume, limited resources, medical doctors are not going to be able to prioritise research. So how do we still do research or still connect doctors and scientists in an ecosystem that is stretched? So these are, I

think, a couple of major challenges, what we could do to overcome them, and some things we have done, at India Bioscience is set up meetings.

Recently, we had a regional meeting for young investigators where we held it at a medical college. And so by sheer fact that it was at a medical college, we got a sizable footfall of medical doctors and trainees, and then scientists were there. And so we got everyone under one meeting roof, and you could see that conversations were flowing. Whether that led to any tangible outcome or not will, time will tell, but at least people got started with talking. So maybe meetings can help. Sort of joint virtual sessions could possibly also help, maybe small grants. To say, you know, the grant has to have a medical doctor and a scientist co applying, and you have to be able to bridge both your professional worlds. So say someone is making a biomaterial that could be used for a knee implant, then you could think of a biomaterial scientist and an orthopaedic surgeon writing a grant with a very concrete plan as to how they would bridge both their work. So these are some of the things that are on or on my wish list to be able to execute at some point in my career.

You know, now that I'm back in India, medical doctors who are scientists in India are in some way the living bridge between medicine and science. In the absence of infrastructural setups. The bridge now is people who are trained in both.

Aside from the infrastructure challenges regarding places where clinicians and researchers can meet, what else have you seen regarding India's, like, specifically India's bioscience life science ecosystem?

Apart from the challenges that, you know, India has been talking about for many years, I would say the last decade, if I can look back in my current role, I would say the last decade actually has been it's been a tremendous decade for life science in India. We have to start with, I think, lot of early career life scientists are those who have, in India, currently have trained out of India and chosen to come back to India. And I think that is a very heartening sign, a very promising sign, which probably three decades ago was a trickle. It's still not a gush of people choosing to return, but it's definitely more than a trickle. There are people proactively seeking opportunities to come back to India, which means they believe they could have a world class career in India. So that I think one is very positive.

The second thing, I think the number of scientists in India and life science research who are publishing in very good journals out of India, and really high quality work in high quality journals, that's a good sign. That means, in spite of infrastructural challenges that we do acknowledge, people are being able to continue to do their good work. And I

think the third thing is life science in India, through government funding platforms, through private platforms or philanthropic platforms, have managed to build partnerships with international organisations like the European Molecular Biology Organisation, EMBO, like HFSP, with NIH, or with Bill and Melinda Gates foundation. And that is a very heartening sign. I think the three of them put together. I would say it's been an excellent decade for life science research in India. And now the test is how we can leverage this good decade to scale it up a notch, even higher. And what elements would need to come into place in terms of funding, retention of talent, ease of doing science in India. And all of these, mind you, are conversations that happen regularly in the life science community. So there's a tremendous degree of acknowledgement that these are areas that need work and there's a lot of conversation on how it can be fixed. One of the goals in the upcoming decade is to ease doing science.

Easing the doing of science in India | And how would you do that? How does that happen? What does that mean?

That's a great question. I think India adopted this phrase, ease of doing science from our corporate changes that were happening when called ease of doing business in India. So for many years, people said, we want to do business in India. It's such a large market, there's so much manufacturing and information technology work that can be done. But doing business in India is tough. And the ease of doing science sort of stemmed from there. I think one low hanging fruit, relatively low hanging fruit for this would be to ease our administrative processes. I think they are outdated, they are rather archaic. And for most of us who have returned to India, sort of feel we are time travelling backwards. When you have to work with paper in an era when everything could be a click of a button and a digital, sort of a seamless digital exchange, limits for purchases, the requirement for multiple parties, you know, what we call like a tender to make a purchase. These are all things that we have learned after coming back to India.

So they obviously operate at a minimal scale when you talk of doing science in Europe and the United States. And I think this definitely is a big factor that contributes to the ease of doing science in India, even addressing this bureaucracy that is as much as needed to ensure responsible utilisation of money, because it is public money to ensure that there are cheques and balances and processes in place, but also not so much that it deters the entire process of doing science. And I think now this factor is more on the side of presenting more challenges than the science itself. Getting materials and chemicals to do science should not be more challenging than the science itself. And if we are there on this spectrum, then we know we need to fix something.

Science diplomacy | Coming back to how sciences, life sciences in particular, are growing a lot in India, but also across the world. One of these areas is science diplomacy. What science diplomacy is, and what are one of the largest problems that can be addressed with science diplomacy upfront?

I'm not an expert in science diplomacy, I have a growing interest in science diplomacy. But I will say this, that I think India can do a lot more when it comes to science diplomacy. We have a lot to gain from it and we have a lot to give the world through science diplomacy. One example was our vaccine diplomacy more recently, during the period of COVID where India shipped vaccines to several low and middle income countries. And the goodwill that we garnered, not only did it help our bio manufacturing units economically, but we also garnered tremendous goodwill from those parts of the world that had received those vaccines. And that was very heartening to see. I remember I was on webinars with some global platforms at that time. And you had colleagues from Kenya and Jamaica who said, oh, the first shipment of vaccines came to Jamaica and it was an Indian box that came and so on. So there was not only hard gains economically, but there were also soft gains with our global footprint. The other example historically was India's work with the United States on the polio vaccine. Few people know this that actually it was scientists from the United States who came and helped set up polio vaccine manufacturing in India. That was another very interesting example.

India has, of course, collaborated with the world on defence and information technology and space exploration with life science research. I think there's a lot more that we can do. India has a few missions which support scientists as attaches. I believe there's one in the United States, there's one in Russia, there's one in Japan. I think there's one in Australia. So start with, we should expand these missions. With every ambassador, with every high commissioner, you should have a science attaché to advise on scientific partnerships that can be built between the country where India has a diplomatic presence and India. This could not only be to plough business back into bio manufacturing. In India, for example, biomaterials prosthesis devices. This could support medical tourism. There are several countries, particularly in the Gulf, the Middle east, where people come to India to get surgeries done.

It would not only bring business to India, but also when it comes to countries in the Middle east, countries in Africa, the Caribbean, It could also be a way for India to promote and support women in science in these countries. Sure, India has challenges with women's representation in science, but some countries in the world have even more challenges. And India could be that example. Example where we support programmes for school for girls in science, for women scientists and so on.

The other thing that I think India can tap into much more, and I'm giving all my ideas here, is that India has a very vibrant people of Indian origin who live out of India. And they are not just those who have migrated in the last 30 years or 50 years. That's still a very recent migration. We have people of Indian origin who have migrated to Guyana, for example, Suriname, Trinidad and Tobago, Fiji, hundreds of years ago, and we could build. And they still have a very strong connection to the mothership, to India, that is their mothership. Many of them may not even have visited India. Maybe their grandparents have not visited India. Maybe the last footprint in India was their great grandparents who migrated, for example, to Caribbean countries or Pacific countries like Fiji. They have such a strong connection to the mothership that building an exchange programme. And we do some of this, but we can do a lot more to bring students from Trinidad, Fiji, to come and train in India and then take the learnings and goodwill from their experiences in India back home. This would be a tremendous diplomatic presence for India. So, science, diplomacy, yes, it's about what you can give the world, but it's also about what your country can gain from scientific exchange with the world. And I think India has a lot to be done. I have outlined some of my wishlist ideas there as well. So who knows? Maybe the next stop will be to next career stop will be to work on something like this.

Science exchange logistics | I'm curious about the process of setting up such exchanges. What goes into something like this?

I would anticipate buy in from multiple agencies for something like this. These are ideas on paper, but they are implementable in my opinion. I mean, I think we have tackled larger challenges. India has tackled larger challenges than this one is. You need buy in from the ministry of science and Technology, you need buy in from the ministry of foreign affairs, our ministry of external affairs. You will have to ease the way people enter into these positions. You know, they should be open to people just applying and entering, rather than having necessarily been promoted through the system, because not everyone in the system may have an interest to do something like, it may be just someone out of the system who says, I would like to do this for my country, and I am a scientist, I have the training. And now if you provide me with the resources, it's something that I would love to get into.

So easing the way you can get professionals who would like to do this, and then finally, I think the courage, there will be the money, there will be the professionals, but you have to have the courage to say, we're going to try it out. And if we put in our processes to evaluate it after a certain amount of time, where we've given it enough time to take

shape and yield results, do a very dispassionate, analytical view of whether it's worked. And there again, what you call work or what you call success in these sort of initiatives, they won't always be very hard and tangible outcomes. They could just mean goodwill for India, a soft presence for India internationally, maybe when India needs support at global platforms like the United Nations and so on.

People who have experienced this exchange, scientific exchange with India will stand up for India. And so we have to wait it out, I think, while we do our evaluations, because we have to make sure the money is going in the right place. We will also need to have the patience, so the courage to try it, but the patience to wait out the outcomes. Often when you put public money on something, the tendency is to want to see something very concrete very quickly. And the recognition should be that this is a long game and diplomacy is a long game. And science, diplomacy is also a long game, and we should be willing to wait it out.

Scientific projects Dr. Kaushik has worked on | What is currently your favourite project that you are working on?

So I think scientifically, something that I also had the courage to try was during COVID when our lab, that time, I was a faculty at the university, and our lab had locked down, obviously for safety reasons. And I still wanted to do something, because I owed the researchers working with me training, I owed them publications, you know, you wanted to give them all of that in spite of what was happening. And so there I thought, you know we are working on biofilms. My research group used to work on biofilms and I said, we really don't have a large bioinformatics repository that models biofilm proteins that can be used as targets, as therapeutics. Let's build this. And it started off in most casual way where I posted on Twitter that, hey, I'm looking for somebody who knows something about this protein modelling.

Some scientists replied, and it ended up being a three year long collaboration. We published two papers, several students were trained. The repository is live and it's archived, it's there to stay. We have more than 5000 targets that we modelled. And I think the best part of all of this is that the scientist who replied, the collaborator and I became friends. So this is a story in itself. We are now very close friends. I moved to India Bioscience last year and we recently organised a flagship meeting in central India in Bhopal, the Young Investigators meeting. And I had the opportunity to invite this collaborator as a co organiser for that meeting. So the lesson is you can, you can do great science even if you shift streams, and you can even continue those professional relationships through different career roles.

One thing I'm really looking forward to is a project that we are going to start soon called India biospaces. Lots of community feedback told me that India needs a dedicated life science networking platform. Twitter is there, other platforms are there, but there's a lot of noise. It's not just for scientists, right? There's a lot of things that are discussed on Twitter. Apart from the fact that we deal with variations and algorithms on Twitter almost on a daily basis. Sometimes our tweets don't reach anybody and sometimes the most mundane things we tweet will get 500 likes. I'm sure you experienced that, so that's on a lighter note. But Indian scientists working outside of India say they would like a dedicated platform to reach out to opportunities in India, to give back to early career scientists in India. Young people wanting to do science in India, scientists in India, they say, we are such a huge country, we need a digital means to be connected.

One of the projects I proposed for a leadership programme that I had the opportunity to be selected for is India Biospaces, which is going to be a digital networking platform to support life science researchers in India and life science researchers of Indian origin out of India. Who want to connect with the community back in India. And I'm excited to see how a dedicated platform like this will pan out. I would anticipate it would lead to a lot more sort of relatively easy connections and collaborations, like inviting people for talk, for conferences, exchange of information. I would anticipate this would happen easily, but I'm also excited to see if it can lead to larger outcomes like faculty positions, like job opportunities, proper grant collaborations. Again, it's a means of connecting researchers in India and our Indian diaspora back to India. So it sort of bridges my world, my interest in science diplomacy, versus my current role, which is in connecting communities. I'm curious to see how it will go, but we definitely have to do it now, now that we have been selected for it.

India Biospaces, a global networking platform | Wow, that actually sounds very interesting because I feel like when you want to own social media and then you search for a random topic, let's say you get like, yeah, you said all of this random noise from posts that are like, you selected up from the algorithm, right? And yeah, that will be something that might enhance connections and bridge perhaps some science communication barriers. That would be very exciting to hear in the future, how that turns out. exactly.

I think it's particularly relevant for India. We are relatively resource constrained, but we have 4G Internet connectivity in every village of the country. It's ironic that we are in that space where India is remarkably advanced when it comes to some aspects of digital technology, and yet remarkably resource constrained when it comes to others. So could a digital platform overcome these barriers? Could this mean that an Indian origin

scientist in the United States gets an opportunity to mentor a student who's just starting their undergraduate programme in a small community in India? If this sort of, that would be for me, that the transformational potential of such a platform it remains to be seen how it will work once it's deployed. But I think the need to connect a large community like ours and the tools, which is digital availability, are both in place. So let's see, let's see what happens.

Mentoring young scientists | What do you see young, you know, young scientists or early career researchers needing in terms of scientific mentorship?

I have learned through my own mentorship experiences, as in having. Receiving mentorship and also having tried to give mentorship, that it's very individual. Finally, two or three key things that I remind myself and I think we are all in some learning curve when it comes to receiving mentorship as well as giving mentorship. I think when it comes to receiving mentorship, I have tried to learn to not take any sort of criticism to mean you're not doing a good job. It could just mean you could do a better job. And that's where I want to see you. So even when it comes to receiving mentorship, one has to be open to it. And what I have learned when it comes to giving mentorship is that one really has to not expect the other person to become you. They are them. you can provide them opportunities, you can provide them with resources, constructive feedback. But to expect that they should show the same approach to their careers as you is not possible. Because situations are different, people's driving factors are different.

So I would say on the mentorship spectrum, with every new job, I have had to get better at receiving mentorship as well as giving mentorship. And I would say I'm far from perfect. I'm still learning every day. I have a lot more work to do on myself when it comes to receiving mentorship, as well as being able to give it in a way that it is well received. With mentorship also, we only know how we do things, right? I mean, I only know how I built my career. It's very hard to think of to put myself in someone else's shoes and expect to understand what they want out of a career. So maybe a starting point will be conversations.

Yeah, I mean, I totally agree with that because bad mentorship can really be a barrier for people going into academia, potentially because it can discourage certainly students. They're just learning. And as you said, one of the reasons is that mentor often expected you to become them.

Exactly. Exactly. Which we are not. But also, I have received some extremely good mentorship during my PhD, but it was a very hands off mentorship and it worked for me.

See, it's one thing to be a bad mentor, but it's also one thing to be a hands off mentor. A bad mentor would be toxicity, bullying, proactively making life difficult for somebody, which is all not okay. But also sometimes a hands off mentor would be saying, I give you the resources, I give you good projects, I give you challenging ideas, and then I want you to go with it. I enjoyed hands off mentorship and my mentorship style is also hands off. But I have recognised in a leadership role that that can't work for everybody.

It's one of the biggest, my biggest, most recent learnings on mentorship has been that I will have to adapt my style for people who I am mentoring. And that's not easy and that's really not easy. So it's a work in progress because I default to the style that works for me, but that may not work for them. Somebody might need a little more handholding in their stage, in their professional life, and someone might consider that handholding as micro management. You know, it just varies with who's at the other end. So it's a learning curve.

Learnings from the army hospital | Do you have any interesting stories from when you were a medical doctor at an army base? I just wonder if there's any story that stands out for you.

One of the things they taught me is the exemplary professionalism that is displayed in military. I think I took that. I sort of took that through my career because the training was at such an impressionable stage in my life. Like when it came to time management, when it came task management, when it came to quality of the work that we put out, those three years were very formative in that sense. I think the second thing is, because it catered to soldiers who were stationed across India, and if the case was transferred to this unit, it meant it needed some serious medical attention. I was exposed to a wide variety of infections and medical conditions and complications, which in some way did train me, train me, and during that phase. So that was very interesting growth period on the job, sort of learning.

And I think the final thing is that when I left, I was a civilian in the in the unit, but I did leave with two options. I either had to pay to leave, like pay a bond, you know, I don't know what you would call it, like you pay something to be able to leave or you serve. So in that way, your service is sort of paying for the free education that you received, or you pay money and leave. And of course, by that time, I had met my husband and he was in California, and I chose to pay to leave. I paid that bond, and I think as I paid it, a senior officer in the army medical court said that, you know, it's the loss of the Indian army that we couldn't convince you to stay. And I left that on that note. I left it. It was bittersweet. It was very bittersweet because I know my life was moving in a direction where I could not get permission into the army. My husband was out of India at that point. We didn't know

we are returning to India. But him saying that drove into me this need to always professionally give back to India. I never thought that my education was the product of years of subsidised government funds. I had paid very little for my education, and I had to give that back to India. So I'm happy he said that at the time, it made me feel bad. He said that because it left this lasting commitment to give back to India.

Advice to young scientists | What advice would you give to scientists who are starting out their careers at this point in time?

Today, science is not a linear career path. There is absolutely nothing to say that a PhD and a postdoc will land you a faculty position, or a good postdoc will land you a great faculty position, or you would enjoy that faculty position. This worked at a time when there were limited other career options, so people didn't sort of have that temptation to look around and see who was doing what else. And also because a smaller number of phds were being churned out everywhere, the landscape is completely different things. So again, I would say, be open to adapting. Adapting your career. A PhD doesn't mean academia. It means learning skills that you can transfer to a wide range of jobs. And who knows? In that search for a wide range of jobs and opportunities, you might find something that works with your other value systems, like where you want to live, how much you want to earn how many days a week you want to work, do you want a remote work arrangement or an in office work arrangement and so on, which academic jobs would probably not be able to offer this kind of flexibility.

So there is actually a tremendous opportunity lying out there when you are adapted, when you are able to adapt. And I think, secondly, is just keep the drive. I often think is drive intrinsic? Can it be cultivated? I think it's a combination of both, but find ways to keep the drive going. And one thing that worked for me is if I don't particularly like something that I'm working on, I find passion projects within my work, smaller projects that sort of get me excited to ride over a few weeks or months of tough professional phase and so on. Somehow keep seeking ways to keep the drive going. So I'll come back to what I said in the beginning of the podcast, which is adaptability and driving.

We'll have to circle back in a few years time to see if you tick those things off your bucket list.

Now that it's out there, I have to do it.

Outro

Thank you for listening. If you enjoyed this episode, follow us. Give us all the stars and share with your friends. We hope to see you in the next one.