

Q&A with Shree Bose

Interviewed by Joelle Seligson

While her high school peers were reveling in freedom from schoolwork, Shree Bose was spending her summers in the science lab. At 17, Bose, an alumna of the Fort Worth Museum of Science and History's Museum School in Texas, made history as the winner of the first Google Science Fair. Today, Bose is a senior at Harvard University and co-founder and COO of Piper (*playpiper.com*). She is known internationally for her own science work and her efforts to make science, technology, engineering, and math (STEM) more accessible for children. Bose chatted with *Dimensions* about how she got here and what she's planning for after graduation.

Shree, what put you on your scientific path?

So I think I was really lucky. I actually have an older brother named Pinaki, two years older than me, and I remember one of my earliest experiences as a kid that I remember was my brother coming home every day from school and teaching me everything he had learned in science class that day. I remember how excited he was when he taught me things—I remember his face lighting up when he was talking about molecules and cells, and I just thought that was the most incredible thing, just because of the way he explained it. So that's what got me started in science, and that sort of enthusiasm is something I've never lost. And I think I've been really lucky to be able to have somebody that's such a great mentor in my life.

What a great older brother. One of the things that [ASTC] is doing in general is collecting stories or videos or photos about people's experiences in science museums [astc.org/myscimuseum]. Do you have any favorite memories in science museums?

Yeah, definitely! So the Fort Worth Museum of Science and History was actually a really big part of my growing up in Texas. My dad was one of those people who always loved science museums, so that's where we went on the weekends. My family got a season pass for the IMAX, so any time there was a new movie about anything, we would go watch it. I remember I learned about everything from coral reefs and dolphins to outer space from watching these IMAX movies. And I think they're put together and the exhibits are put together in a way that made me really excited. So going to those as a young kid, I fell in love with a lot of the concepts I learned there, and even if they're not in depth there, the spark and the inspiration that they create—that's a powerful thing that I think has played into a lot of my work, both in research and in wanting to create tools for kids.

Great. So tell me a little bit about your participation in the Google Science Fair. How did you get involved and how did that then alter your trajectory?

So I actually got started in research before getting started in the science fair. My grandfather passed away of cancer when I was a freshman in high school, and I remember at the time more than anything just being really confused by the disease, by not understanding what was actually happening at a cellular level in his body. And at the time I remember I started reading, I started looking up articles, I read and watched everything I could about cancer because I just wanted to understand. And at some point I realized I was actually starting to ask questions that professors had listed under their research interests on their lab webpages. So that was the point I realized that I really wanted to be able to find a lab and to get involved at a much deeper level than what I was doing. So at 16, I decided that I wanted to write to hundreds of professors in my area to see if any one of them would take me, and the answer was no from all of them except for one. So I found one professor who was willing to take me under her wing. In my first summer, I did some really cool work on breast cancer, and when I returned the second summer I got to do this really cool project on ovarian cancer and drug resistance. And that was also the year the Google Science Fair started, so I was able to present this work at the Google Science Fair, and that's kind of how that all came about.

And then how did winning change your path?

I think I was really lucky to win, because there were so many incredible projects that were here. I got this huge platform to be able to speak about my research, which not only made my opportunities for doing research so much more valuable, but also I got to talk to kids. I got to talk to students who were pretty much the same age as me, who were sometimes interested in science and they didn't know where to start, and I was able to give not only guidance but also, with Piper, actually create something that was powerful and that other kids could use to do more effective things, more things that would actually affect the world. And that was a pretty incredible thing, and I credit a lot of that to this global platform I got after the Google Science Fair.

Break down Piper for me a little bit. You've gone into it a little bit, but tell me why you created it, and what's your goal?

I actually met my incredible cofounder a couple of years ago named Mark [Pavlyukovskyy], who's a Princeton graduate. I was talking to him about wanting to create tools for technology for kids, and how I had seen a lack of those tools. At the time I was speaking to hundreds and hundreds of students and they would come up to me after a lot of talks, and most of them would have questions like, "I'm interested in biology, how do I get started?" And for them I had my canned answer: This is what I did, I reached out to professors, that's probably the most effective way you can do

research. But when I had a lot of students come up to me and ask, "I'm interested in technology, how do I get started?" that same answer sort of fails, because that's probably not the most powerful way to get started. You get started by actually tinkering and playing. And so my cofounder and I were brainstorming about this. We realized there's nothing really like that out there, and we decided that we wanted to make it. And that's how Piper came about. It's this kit that lets kids build their own computer and then basically play a series of challenges in Minecraft, which are each paired to a piece of hardware. You are building hardware, you're learning how electronics work while you're actually playing a game. We harnessed the power of a really fun game into a product that actually is very educational and gives you the tools to actually be able to create your own things, which is really cool.

How has it progressed? What kind of response have you seen?

The team has definitely grown. We have a lot of incredible people who are very passionate who have come on board and are making the product so much better than I could have ever imagined. So it's grown in that way, but also we launched a Kickstarter in March of last year, and we were aiming—in Kickstarter you have to meet your goals or else the project kind of dies. And so we set our goal at \$50,000, and we ended up raising \$280,000. It was this sort of sign that there was demand for this sort of product out there, and people wanted to see it. So we just did our first Christmas shipment of Piper and we've gotten some really great feedback, and we're improving from there, and the next shipment will be even better. We've been really lucky to have a core base of people who believe in us, who believe in our vision, and who are willing to make that possible, which is really good.

That's excellent. That's exciting. And you're still in school.

Yes. I am. I'm a senior. Last year.

Wow, yeah, you're getting close. So what's next for you from there?

That is a really good question. I feel like I'm in this—if you check back with me in a month, the answer will be completely different. But at the moment—I started off in science because I really love medicine and research. That's always been my career interest. So I'm going to be doing research or something related to medicine in the next few years, which I'm really excited about. And I hope to be able to create things and have an impact on people's lives in a meaningful and positive way.

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