

Podcast: How to Turn STEM Curiosity Into a Career

Microbiologist Zaina Bawa-Mamudu talks with an Abbott intern about mentoring, diversity and curiosity.

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In this edition of Shaping the Future of STEM, host and intern Fiona Harley speaks with Zaina Bawa-Mamudu, a microbiologist for Abbott's Structural Heart division based in California. Listen as Fiona and Zaina discuss how mentors can provide valuable guidance, the importance of being curious and learning from an accidental school science lab explosion.

Fiona, who is studying biology and engineering at UCLA, is the latest host on Shaping the Future of STEM. Every episode features different female Abbott high school and college interns as they interview female Abbott STEM professionals from across the company. As a global health technology company committed to providing opportunities for students in science, technology, engineering and math, we offer opportunities around the world including our award-winning high school and college internship programs.

READ THE TRANSCRIPT:

Fiona: Hello, everyone, and welcome to our podcast. I'm your interviewer and this episode's host, Fiona Harley. I'm a student at the University of California–Los Angeles, majoring in biology and engineering. I spent the last two summers participating in Abbott's high school STEM internship program. I'm happy to speak with this episode's guest. Hello, Zaina, and thank you so much for being with us today.

Zaina: Hello Fiona. It's a pleasure to be here and it's very nice to meet you.

Fiona: Thank you, you too. I'd like to start by asking you to tell us a little bit about your career and the work you do at Abbott.

Zaina: I've been at Abbott for a total of 15 years and I've been in the microbiology department for most of those years. As a microbiologist my main function really is to ensure that the product that we're making is free on minimal contamination. So all the work that goes into making a product, we have to make sure that it is safe to use and it's not contaminated. So there's a lot of work that goes into that.

Fiona: Right, right there – You're, all the work that you do is so interesting. I was just wondering, what drew you to the STEM field? Or was there someone significant in your life that just introduced you to STEM and you fell in love with it?

Zaina: I'm not quite sure exactly, you know, where it happened. But I do know, from a very early age, in elementary school, I was very interested in math and science. We happened to live in an area in Chicago by the University of Illinois Chicago Hospital. And we lived in an apartment building that had only doctors and residents that lived in the building. And I was a babysitter for two of the doctors. And so I think just by way of life, and it wasn't something that was sort of, I was conscious of, but I think at some point, I started to pick that up. At 16, I went to work in an accounting firm at Northwestern Hospital in Chicago. And after a year, they actually approached me and said, 'You know, we don't think you belong here. I think you enjoy interacting with the patients more.' And so, that's really when I started focusing more on medicine and science, because actually I did like to sneak out and go hang out with the patients at the hospital. So it wasn't something that happened, you know, overnight. I think it just, by putting myself in situations that sort of geared me towards that path and made me more confident that I was following in the right path.

Fiona: Right. I really like how you were talking about the environment that you grew up in and how you're surrounded basically by the STEM fields. Can you also talk to the importance of introducing our younger generation to the STEM field through like mentoring programs like ones that you have participated in?

Zaina: A lot of my most proud moments working at Abbott is really interacting with the kids. From seventh graders to project scientists where there is youngest, I believe, five or six years old. And just seeing the excitement in their faces. They're so intrigued. They have so many questions. And just to see their mind just thinking outside of the box. And I think it's such a reminder of why we got into STEM, why we love it. It's really great to see, you know, those behind us, so intrigued by it, and it brings the love that we had when we were younger too. And so that's one of the things I really, really enjoy about working at Abbott, is those opportunities to interact with younger kids who are interested in STEM because it really re-energizes your commitment to the work that you're doing.

Fiona: Just a question. Like, if you were talking to your younger self, what advice would you offer about pursuing a career in STEM?

Zaina: I would just say keep being curious. Keep asking questions. Keep trying things. And that's sort of always been my thing is just not focus so much on just the books, but just really, you know, anything that you find intriguing, curious, just follow through with it. And I think that, sort of my the same today, I was still curious about everything. And that makes me sort of like a forever student. Because I love learning new things. I love not knowing things and having to figure it out. So that still stays with me.

Fiona: I love that philosophy of always just being so curious and always like, being willing to try new things and everything. And don't be afraid to fail. Right?

Zaina: Definitely, definitely.

Fiona: Just to bring in an aspect of culture, I was adopted at the age of one year, I think? But I was adopted from China. I'm ethnically Chinese. However, my mom is Irish and my dad is Korean-African-American. And so I'm a very, very big mixture of a lot of cultures. And I think it — I also bring a different perspective into the world, right. And I think that having a cultural perspective in the science field is also very interesting to obtain. And, as I'm assuming that you also work with scientists from across the globe, do you ever find yourself facing any cultural barriers, or do you see like science as a universal language? Like, are there any language barriers? Are there any, like units that don't match up and you have to convert them again, is there any challenges like that?

Zaina: I do get a chance. Working as a divisional microbiologist, one of the areas is sort of serving as a mentor, and guidance and answering questions to counterparts in Ireland, as well as Costa Rica. Culturally, I don't think that there's a lot of difference. I think we all sort of speak the scientific language. Maybe the way we spell things a little bit different. But I haven't really felt any difficulty in interacting with counterparts from other parts of the world. I can't tell if that's because of my own personal background, or being born in West Africa, in Ghana. I was born and raised there until about eight years old. I moved

with my father to Chicago in the Midwest and then moved to California when I was 19 and I've lived here for the last 20 years. And so I started seeing myself as also sort of an international person. So in my own personal background, sort of, maybe I don't notice the differences? I did grow up speaking the queen's English in Ghana. So and hence the accent where most people cannot place their finger on where the accent is coming from. And I think I just kind of drag the British accent with the Midwest accent and now the Cali vibe and the whole mix of whatever that is. But no, I think to me it's universal. I haven't seen any difference in working with my counterparts. I think the language of seeking information and respect and sort of treating each other, well, keeping in mind that there might be difference, but, you know, questions and having that patience has done well for me. And again, it could be my own background. I'm not sure yet.

Fiona: During my internship, I also had to correspond with people in Ireland, right. Because of my background, too, I think, I think I understood the time change a lot more of receiving emails at three o'clock in the morning was very, very normal. But I do, I love, I love your perspective on cultural and how it has actually enhanced your whole STEM experience.

Zaina: I'm actually curious from your very fascinating background, how do you think that sort of impacts you or, or sort of either an advantage to you how you deal with others that are from different backgrounds? Do you think it's something that has helped you or hindered you in some ways?

Fiona: Oh, I definitely think it's something that will help you because, as I've said before, like understanding multiple cultures, just introduces you to new perspectives, new perspectives of the world. And just, I feel like when you hang out with people, and you spend time around people who are not your culture, that's really where you grow as an individual. And just becoming cognizant of like, who you are and where you are in the world and who's around you. I think that can just better develop your interpersonal skills, right, and as you were talking about. Because yes, I do agree you have very good interpersonal skills, very friendly persona. And I think that does come a lot from just understanding, trying to understand people, being willing to accept their culture, being willing to understand that they may not be the same culture, however, that doesn't make a difference. You're still going to work together. You're still corresponding. You're still like part of the same race. You're all part of the human race, right.

Zaina: Absolutely. I think that anything that you're interested in, in STEM, along with anything in life, if the opportunity presents itself, go for it. I think what you're doing is amazing. I wish I had this level of internship when I was younger, honestly. And I think that's one of the things that makes me so involved in these programs that Abbott offers to young people, is recognizing that I didn't have that. I didn't have that. I may have had sort

of peripheral influence, you know, sort of unconscious, you know, influence in my upbringing, in STEM. But it wasn't outright programs, mentorship, someone holding my hand and helping guide me. And so I had a lot of, I took the longest way ever, you know, to, to get into STEM. And being the first in my family, particularly interested in STEM, not so much going to college or some of that, but I was the one that was interested in, in the sciences. So there wasn't really anyone that I could talk to. So it was a lot of mistakes. If just something as simple as academia, what classes should I take, you know, and so, the strategy was take them all. And then sort of process of elimination. And so my advice to anyone interested in STEM is go for it. But don't make it a mystery. STEM is, it's a natural curiosity in a person, in a child. And I think that having them intern, having the sort of, you know, any type of apprenticeship program, any type of workshop, if a child is interested, have them do it. I think that, knowing, it's not so much about knowing what you want to do. It's just knowing, you know, 'Hey, I've tried that, I don't particularly, you know, let me try something else. And I want to make it real and attainable for, for kids. Just making science, not, it's just part of your life, part of how you think, how you, you go about your life, just being curious and wanting answers to questions. That's really how I like to approach it. And I would encourage anyone interested in science to approach it that way as well.

Fiona: Right. Zaina, I think you and I are very similar in the fact that I will be a first generation college student. I am also the first in my family to be interested in the STEM field. I think like you, I just went into high school saying take all the classes, we're going to eliminate a few that I don't like and just see where my interests lie, right.

Zaina: No, that's wonderful. It's a great, it's a great approach. And you pick up certain things along the way that actually build stronger scientists or engineer or technologists, because I think it's that overview, that being able to be a critical thinker. And I don't think that you sort of have to stay in that frame of mind of scientists to be a good scientist. I think having those other experiences strengthen your ability as a scientist. I actually have a story. I was working while I was a student. And it was a sort of a three-day experiment. I think it was distillation and we had to wait for the cylinder to cool down before we add the ethanol. And so, I like to cook, so I think I have a higher, you know, I can do high temperature I have a high tolerance for temperature. So I was hurrying to get to the restaurant where I was, you know, waitressing. And so I thought it was cool enough, because I had to make it to work. And I just, you know, gently poured the ethanol in there and then the whole thing just exploded, right. And so, thankfully, you know, we had a very good teacher. He got to it and you know and put out the fire. But that was the end of the experiment after several days of doing the experiment. And so I had to write a report. And I was wondering how I was going to pull that off, right, where you have to put what your results were. And so I just went ahead and sort of wrote it as you normally would a scientific paper, everything that happened, except for the part where there was the result.

And then I got creative because I love reading and writing as well. I wrote exactly what happened, and why it happened and why I did not have a result, and what I learned out of it. And I just go well, you know, it is what it is. And I gave it to the professor. And to my surprise, he gave me an A plus. He said that was for creativity because I was very impressed to see how you were going to get out of it. So yeah, I do agree with you that having that ability to, you know, again, think outside the box. Being a good writer will help you, yes.

Fiona: I would have loved to participate in that lab. Not that I would like to see chemicals burn. But I was just wondering, what do you hope your legacy will be and why?

Zaina: Um, you know, I just want to be a helper, right. I think, anyone that I come in contact with, whether they're young or old or anything like that, if I can help them to get just one inch towards their goal, towards their step, I feel fulfilled. You meet a lot of interesting people, like you for example. It just makes me happy, just meeting people and getting to know people and learning all the similarities and differences in all of us. But I hope that, you know, when people think of me or when they meet me, and they sort of leave with the impression is that, 'I learned something,' or 'I have clarity' or 'she was helpful.'

Fiona: Yes, yes. Zaina, I just thank you so much for being here with me today. I just have one question, it's a final question. Very, very difficult one. Would you rather build a snow fort or a sandcastle?

Zaina: Um... a sandcastle. I grew up in California. I live at the beach. There's plenty of sand. I love sand. And even though I grew up in Chicago, I think I got all the cold, the tolerance for cold out of my system. So always, always, it will be a sandcastle. Definitely.

Fiona: Oh, I think that is where we differ. See, I love snow. So I will totally take the snow fort, you know ...

Zaina: Really?

Fiona: ... make a little blanket in there.

Zaina: Ok, ok. Well maybe we can have a moment where we're in Big Bear somewhere where we can have the best of both those? Snow and sand in the same spot.

Fiona: Well, thank you so much for being here with me today, Zaina. It was a pleasure talking with you.

Zaina: It was a pleasure, Fiona, I hope to really – I do often meet you. And I would love to, you know stay in touch because I'm pretty sure whatever it is that you end up doing is going to be fantastic and I can't wait to watch.

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