

GUEST SPEAKER 1: So hi, everyone. My name's Nicole. I'm here with Elaine. And both of us are part of the Society of Women Engineers. So we both just wanted to give you a little bit of background on ourselves, and then talk about some of the opportunities that SWE has.

So I actually didn't know anything about SWE when I was in high school, either. I learned about it during my senior year. So SWE has multiple scholarships. We give away thousands and thousands of dollars to support girls who are excited about STEM and about engineering and getting involved in those fields.

So when I [AUDIO OUT] had no idea what I wanted to do. I really liked doing the engineering side of things. So I'd worked in a lab for a couple summers at UCLA in a bioengineering lab.

But I also really liked the business side. So I was part of a floral arrangement business, actually, that was run by my school. And so we did everything from marketing to sales to actually putting the flower arrangements together. So that was really cool.

I went to Penn for college. And what's really neat is they have a program called the Management and Technology Program. And so you get a degree from their business school and a degree from their engineering school. So I ended up going to do entrepreneurial management and bioengineering as my bachelor's, and the chemical engineering for my master's.

So I just want to share a little bit of how SWE was able to affect my college experience. It was amazing. I think the thing that really impresses me most about SWE is that it really touches on three different aspects.

So you have the outreach part of it-- so getting to speak you guys, getting to engage with K through 12 students, and really get them excited about STEM and show them what's possible.

The second part is with the professional development. So being able to look at resumes, do mock interviews, just grow yourself personally and professionally I think is so important no matter what fields you end up going into.

And then third, just the fun, social aspect-- so the fact that you guys are going to have lunch here right now. Getting to engage with people at different socials and things like that is just really fun. So I have in the upper left-hand corner, it's a picture of the SWE Boston group here.

So everyone in the Boston area can be part of that.

I was on the board of directors, actually, for SWE during my senior year-- super senior year when I was doing my master's, which is really cool-- so getting to interact with people from all around the world, and really move the strategy of SWE forward. And then just a couple fun pictures-- one from my collegiate section at Penn, with our Engineering Chip t-shirts, and then a fun photo booth at one of our annual conferences.

So Elaine, if you want to tell a little bit about yourself?

GUEST SPEAKER Yeah. So how many of you people like math classes? Quite a few.

2:

[LAUGHTER]

What about science classes? Just about everybody, right? How many of you like English? Still a lot of people, right? How about writing?

So I will tell you right now that when I started high school, I actually hated my science classes. And so I'm here to tell you about my journey from being an English major to becoming an engineer.

And so when I was in high school, I actually hated science class because all we did was fill-in-the-blank worksheets. We didn't do anything like take apart cameras, like you guys are doing today. And so I was really bored with science, even though I was really good at it.

So when I applied to college-- I went to Rice University-- I decided to become an English major. And at the end of my freshman year, I applied for an internship in writing at the Texas Heart Institute.

And so basically, what they did there was they took all the writing that any of the surgeons did on all the surgeries that they did-- well, all the science research that they do-- and they sent it to us. So that way, we can actually put it into a form that everybody else can read.

And so while sitting there-- and they wanted me because they wanted me to be [INAUDIBLE] their English or make sure that the ideas flowed well. But while I was reading all these things, I had no idea what they were saying. I didn't know what was going on.

There's a lot of disconnect that people say that scientists don't know how to explain things to everybody else. And so that was the problem that I was seeing, and I didn't know what was going on.

So I asked my boss, can I go see a surgery? I don't know what they're talking about. And while I was in that surgery room, the surgery I saw was on a cow that had had a mechanical valve implanted into the heart. And this valve had failed.

Now, that's really disappointing, right? But there are a lot of things that we can learn from failure. And so everything that they were doing as they were taking out the valve, running tests through the cow, and figuring out what went wrong, I started to see, wow, there are these real applications of science that can be really fascinating.

And so as I was working my way through the summer, I thought more and more about these experiences and the things that I was seeing in the science realm and the research realm. And I was like, OK, maybe I can go back to school and check out a bioengineering class.

And I have to tell you that I loved it. So when I went to graduate school, because I had seen all these failures with these mechanical valves and with all these heart devices, I thought maybe tissue engineering would be a better way to go. Does anybody here know what tissue engineering is? Would you like to tell us?

AUDIENCE: [INAUDIBLE]

GUEST SPEAKER 2: No, that was fine. So for people who are not aware of tissue engineering, tissue engineering is figuring out how we can use cells from the body, and figuring out how we can implant them and put them into repair for our tissues. So that way, we can not use mechanical devices.

And the problem with that is that a lot of things that-- it's very hard to get our cells to do what we want them to do. We don't know enough about them. And so when I became a graduate student in biomedical engineering, I decided I wanted to work with stem cells. They can turn into any different potential cell type.

So the thing that was fascinating is I knew a lot about stem cells, and I was trying to tell all these people. But it was really difficult for people to understand that. And so as I was going through my journey and trying to tell people this is interesting, this is fascinating, this is why you should learn it, I realized more and more people need to understand that they need to have an English background and need to have a writing background, as well.

And so my love in English and writing came back. And now the two have merged. And so right now, I am applying for a lot of positions in general editing as an editor for *Nature*, or *Science*. I'm sure you've heard of some of these journals.

And basically, what I'm going to do is going to be combining my love of science and engineering, and turning it into writing that everybody else can understand. And so that way, we can get even more people excited.

[APPLAUSE]

GUEST SPEAKER 1: So we just wanted to share a few different opportunities that you can look into, no matter what grade you're in. And I think it's really cool to just kind of keep these on the back of your mind because you never know what might get you really excited about something.

So one program that's really neat and is run by the society as a whole is SWENext. Next. So this is for girls who are up to the age of 18, I believe. And so what you can do is there's tons of different activities that are through the program.

You can learn about scholarships that are available to you. They do quarterly webinars so that you can kind of interact with the rest of the community around you, and just get to see other girls who are really excited about it. So definitely look into that. It's a really great thing that we launched either last year or a couple years ago, and it's really been exploding.

The other thing that I would say, since I assume most of you are based in the Boston area, look into some of the events that are hosted by SWE sections. So us from SWE Boston-- we host things as a professional section. This is a taste of some of the activities that we did this year.

And so you can see we partnered with the Girl Scouts. We partnered with a lot of organizations-- partnered with Kristen for the Girls Who Build. And we also get to interact with a lot of the community events-- so the Cambridge Science Festival, for instance, which happened a couple months ago.

The other thing I would say is also look into some of the collegiate SWE events. I know MIT has a huge presence with their SWE section, and they do a lot of outreach opportunities for high school girls. And a lot of the other SWE sections in the area do that, as well.

And I think just the biggest takeaway is that you never know what might excite you. I certainly did not imagine that I would be working at Microsoft now with my background being bioengineering, mechanical engineering. But as long as you're passionate about something-- and as Elaine said, you can go from English into science, as well-- there's just really so much potential for you.

So if you want to get in touch with us, I put my contact here, and then the SWE Boston section contacts, as well. So if you have any questions about some of the outreach event things that we do, feel free to get in touch with us. Cool. Thank you very much.

[APPLAUSE]