

SWE GRASSROOTS ORAL HISTORY PROJECT

Prinda Wanakule Interview

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Prinda Wanakule Interview

TROY ELLER: Today is November 7, 2012. This is an interview with Prinda—how do you pronounce your last name?

PRINDA WANAKULE: Wanakule.

TE: Wanakule, okay. This is an interview with Prinda Wanakule for the Society of Women Engineers Grassroots Oral History Project. The interviewer is Troy Eller. We are at the 2012 Society of Women Engineers Annual Conference in Houston, Texas. Prinda is a doctoral candidate in nanoscience and nanotechnology at the University of Texas at Austin. She has served in numerous roles in the Society of Women Engineers, both at the collegiate level and nationally. Currently she is the chair of the Society's graduate student task force and is on the mega issues team of SWE's strategic planning committee. She received the Society's Outstanding Collegiate Member Award in 2011. Thank you for joining me today. To begin with, can you tell me where and when you were born? [01:00]

PW: I was born in Austin, Texas in 1985.

TE: Okay. And can you tell me a bit about your family?

PW: So the reason I was born in Austin, Texas was because my father was finishing his PhD there, at the University of Texas at Austin. So he did his PhD in civil engineering. And my mother, she just does a whole host of things. She's a jack-of-all-trades kind of person. But they both immigrated here to the U.S. from Thailand.

TE: Okay. And can you tell me more about how you became interested in engineering and how you decided you wanted to go into engineering yourself?

PW: Sure. Well, I guess from a young age I always was interested in biomedical sciences. I actually was in a magnet program for—it was sort of a pre-pre-med for high school, before you go to college. [02:00] And so I was always interested in that route, but I noticed that I was always really great at the math and science as well. And when I actually got to college, I was majoring in a traditional pre-

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med major, taking Calculus II, which was the highest requirement required for that major. And I really thought, I really want to take more math and I really want to take physics classes here—physics. And so I decided to think about a different major that I could take more of the classes that I wanted to take, that also led me along the same similar biomedical science route. And so I got into biological engineering from there and I never looked back.

TE: Okay. And at what university was this?

PW: I was at the University of Florida in Gainesville, Florida.

TE: Okay how did you choose that university?

PW: Well, Florida has a really great scholarship program for its residents. [03:00] So at some point after I was born in Austin, Texas, I moved to Florida. And so I did my high school in Florida. And if you meet some certain test criteria requirements and things, then you can get full tuition if you stay in state. And with the University of Florida being the flagship institution in Florida, I decided to go there. And it's a really great engineering school, as well.

TE: Okay. Can you talk about your experience as a woman engineering student? Were there many other women? Did you feel supported?

PW: Sure. I remember in the beginning engineering classes—for example Physics I, Physics II, Statics, and Dynamics—those you take with pretty much everyone else in the engineering college. And I did notice that there was a huge difference in gender in those classes. [04:00] There was probably only, I'd say, between 15 and 20 percent women in those classes. So sometimes it would be over a hundred students in one class, and I only knew a handful of other girls in the class with me. So that did have an impact.

And I do remember at one point when I was taking Physics II just talking to one of my friends at the time, you know, saying that I was having a tough time in the class. I didn't do as well as I wanted to on the last exam. You know, but it's just

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me being really nitpicky. I'm a perfectionist, so maybe I had gotten a B instead of an A or something. I hadn't been failing or anything like that. But he just looked at me and he said, "It's okay, don't beat yourself up. I mean, it's because you're a girl." And I thought, "That's very strange." And so I thought maybe he was joking, and so we kind of continued the conversation a little bit, and then I realized he wasn't joking. [05:00] He actually believed that it was because I was a woman that I wasn't performing as well in physics. And that really got me started in a lot of the women in engineering issues, women in engineering and science issues.

TE: So just to clarify, he thought that just women could not perform up to A-level work?

PW: Exactly.

TE: How did you respond to him?

PW: Well, I kind of explained to him that, you know, I hadn't done—I wasn't failing. It was just that I had poor performance probably just on that one exam, and it wasn't going to be representative of my career in the future. Definitely not. And you know, I tried to argue with him a little bit and tell him that, "You can't say these kind of things. Do you have a basis behind your claims for that?" [06:00] And eventually, you know, we just had to agree to disagree. And I decided that I was just going to put my mind to more constructive things, and then maybe just later on show him that I was able to complete everything that I set my mind to doing.

TE: And about what year was this?

PW: This was in probably 2004.

TE: Okay. And do you feel like his view was representative of many people in engineering, or do you think he was an outlier?

PW: I think that he was a little bit extreme compared to most people, although I do feel like there is a little bit of subconscious preference towards men perhaps

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performing better in courses, in those type of courses. So certainly most people don't voice their opinions now, and I'm very glad of that. (laughs) But he was definitely an outlier in that he just said it as if it was a matter-of-fact thing, instead of keeping that opinion to himself. (laughs) [07:00]

TE: Okay. You talked about how that was part of the impetus for getting involved in women in engineering programs. Can you talk more about that? About what programs you joined?

PW: Sure. It was SWE right from the start. My sister was actually doing chemical engineering—my older sister. So at the time she was an officer in the collegiate section at the University of Florida and she encouraged me, once I changed my major to engineering, to come out to a meeting and see what it was all about. And from then on I took a leadership position right away and I just never stopped. (laughs)

TE: Okay. What position did you start off with?

PW: It was called the Benton Engineering Council representative, so it's kind of a liaison to the student engineering council and the college. [08:00] So I had to represent SWE at the engineering council meetings, lobby for funding from the college, things like that.

TE: Okay. And what other activities and events did your section become involved in?

PW: So the next position that I took on after that was I was elected to recording secretary. And the one major event that I did take part in planning—I chaired what's called the eSwamp event. It's short for Engineering in the Swamp. And it's a freshmen and transfer orientation event, a full-day event out at a lake nearby in Gainesville for all of the incoming women engineering students and the transfer students. And the idea is really to have them develop a sense of camaraderie, introduce them to a couple of mentors that are older engineering students, and do a little bit of professional development for them that day. [09:00] And we're actually kind of evaluating now to see the people who have taken part in this

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program versus the people who did not take part in that program—if there was any effect on retention now. So we'll be interested to see how those numbers come out.

TE: Absolutely. Do you feel like the women coming into the program are at some disadvantage to the men coming into the program, that they need this additional mentorship?

PW: I think that they might be at a disadvantage when they go to their large classes and see that, you know, they're one of very few women in the class. And sometimes you really do need a strong support network around you. And I've never gotten the type of support from my male colleagues that I have from your SWE sisters—your SWEsters. [10:00] My SWE friends have always been my engineering cheerleaders. They are always encouraging me to reach to a higher level, set higher standards for myself, and to do more than I think that I was capable of doing. And so I think that is really important, to have a group of women behind you to tell you that yes, you can do that, and we'll do it together. And that definitely helped me.

TE: Okay. Did you have many other mentors in the program, such as female faculty members, or male faculty members who were particularly supportive?

PW: Yes. I actually got involved in doing research in my freshman year in an engineering lab. It was in environmental engineering, which actually wasn't my home department. But I worked with a graduate student there who was particularly supportive, especially with my professional development. [11:00] That advisor was also very supportive of my involvement in SWE. And as I moved on, eventually, to different research labs I did end up working for a female faculty member, who's an assistant professor. She was quite young and I really looked up to her quite a lot as a role model. And I thought that, you know, if she can do all of these crazy calculations and computational modeling, then I could really do it, too.

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TE: Okay. Can you talk about some of your experience in the research labs, and what you worked on, and what you learned from them?

PW: Sure. My first research experience, as I said, was in environmental engineering, and what I worked on was building and evaluating what's called bioaerosols. So I built a system to run air through a couple of filters, and we aerosolized bacteria through on one end, ran it through the system through these test filters, and we collected what live bacteria was still there on the other side. [12:00] And we were just trying to see the performance of the different filters, if they could actually disinfect as well as filter out, and what the success rate was at that. And it was a government contract to do some—it was around the time of bioterrorism, you know, in the early 2000s, so it was a pretty hot topic then. And that was definitely an interesting project, and I was really excited to do a lot of hands-on work in actually building the systems, and learning about how to put all these fittings together. And I felt like a real engineer, (laughs) being able to do that as a freshman. So that was real exciting.

From there I went on to Dr. Malisa Sarntinoranont's lab at the University of Florida. And she was in actually mechanical engineering—so again not in my home department, but still some really interesting research. [13:00] And I built a similar system, but it was for a water flow system. And I just did some pressure differential testing through some hydrogel—which is a type of polymer—through some hydrogel films to see what the different material properties were of these different materials. And that contributed to some drug delivery modeling and interstitial flow computational models in her lab.

I actually just defended my dissertation last week—successfully, I might add. (laughs)

TE: Congratulations.

PW: Thank you. So I was in biomedical engineering at the University of Texas at Austin, with a small concentration in nanoscience and nanotechnology. And my

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research focused on hydrogel materials for drug delivery application. So specifically I'm looking at pulmonary applications in inflammatory diseases, and designing new, next generation-type of polymer carriers for drugs that are disease-responsive. [14:00] So you're only releasing the drugs in response to the disease—and in my case the inflammation—so you're not going to have as many side effects hopefully, and building up less drug tolerance and less waste. So hopefully it's going to be a pretty robust system moving forward.

TE: And where is that for?

PW: That's at the University of Texas at Austin.

TE: Okay, alright. Can you tell me about your decision to pursue your master's and later your PhD? Why did you decide to go on? How did you make your career decisions?

PW: Sure. Well, I was always very interested in research from my undergraduate, and I really enjoy doing a lot more hands-on, application-based learning. I never really felt at home, I guess I would say, in the classroom. [15:00] It was hard for me to make the connection between, "Why am I learning all of these things? How can I apply them?" And so it was really great for me to have the experience in the laboratory, so that I could take some of the things that I was learning in the classroom and actually apply them. And I feel like those were some of the best experiences. So I decided that I did want to pursue research as a career, and I started looking into graduate schools. And so I applied to several graduate schools, but the University of Texas at Austin—when I visited that school, it really felt like home to me. I felt like it was somewhere that I wanted to be. There was really great research going on. And so I decided to pursue research there, and I was lucky enough to get a National Science Foundation fellowship to pursue graduate study there. And I was able to come up with my own project as a result. And it all fell into place. [16:00]

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TE: Okay. Well, how many women are pursuing high—you know, higher degrees at UT Austin? Do you—

PW: At least in the engineering college, I think that there is still a gender disparity there. It's very department-based, but I think the number does hover around 20 percent, similar to the undergraduate enrollment. However, in my actual department, biomedical engineering, it was close to 50/50, if not more women. So in my lab we actually always have a joke that we have an overabundance of women (laughs) in my lab. So there was only two men out of a lab of twelve. (laughs) [17:00] So there was definitely a lot of women in my lab, and so that was a different experience to go into a working environment where there was much more women.

TE: Why do you think that more women pursue biomedical engineering?

PW: I think that a lot of women, especially in my generation, really want to do work that is kind of touchy-feely. You know, you can see the direct impact that you have on it. So in biomedical engineering there are—you know, there's a lot of reasons, maybe personal reasons, that you might be wanting to pursue that kind of research. So I think that's one of the reasons why a lot of women pursue it. At least for myself, the reason I was interested in inflammatory disorders such as asthma—my mom has asthma. So I just remember growing up and hearing her coughing, and the medication not being very effective and giving her a lot of side effects. [18:00] That's how I got really interested in pursuing the medical sciences.

TE: Okay. Can you talk about your visiting doctoral research assistant position and how you came to be in—was it Switzerland?

PW: Yes. So I spent one summer working at EPFL [Ecole Polytechnique Fédérale de Lausanne] in Switzerland, which is also known as the Swiss Federal Institute of Technology. I went to the one that was in Lausanne, Switzerland—so the French-speaking part. And I did that as part of my NSF graduate study. With the

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NSF fellowship the year that I got it, they did give you some money to do some international travel, either to a conference or for research. And because the NSF is paying your stipend instead of your advisor, you have a little bit more flexibility on where you can go and do your research. [19:00] So the lab that I was particularly interested in working in—I had learned a lot of chemistry from their papers that I wanted to incorporate into my own work. So I thought it would be a good experience to go and visit them.

So they do host a lot of students. It was as easy as getting the right connections to get me in touch with the principle investigator to accept me into the lab, but I actually made it through a SWE connection, Jennifer Patterson, who is actually a very active SWE member. She leads up a lot of the international committee work in SWE. She actually was doing her postdoc at this laboratory in Switzerland, and I met her at a SWE conference. [20:00] And I just thought it was amazing that I could meet somebody who was working in my specific research concentration at such a huge and general engineering conference, and that she was still involved in SWE even after going through her PhD and into her postdoc. So we became friends, and I eventually told her that I wanted to come and pursue research there for a summer. And so she got me into the lab and I had a really great time.

The lab environment was much different than the one that I work in currently. The lab was much larger. There were more senior-level scientists, so more postdocs versus graduate students working in the lab. And as a result, the pace of the research was much faster. It was really impressive to see the kind of things that were going on in a large lab like that, and it was a really eye opening experience. [21:00] I think that culturally Switzerland also has its own similar issues with, I guess, women in the workplace and things like that. Of course most people still have a modern view, but I think in general there's a little bit more conservative views over there. But meeting some of the people who are native to there, they were really impressed by seeing how much women had advanced over the last few decades in Switzerland in the sciences.

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TE: Okay. Can you talk about how you met First Lady Michelle Obama, and can you tell me about that event?

PW: Sure. Let's see, where to start? (laughs) [22:00] Well, I started working with the graduate involvement in SWE, so trying to get more programs and services available for graduate students to support them in the Society, so that there could be more membership, graduate student membership in SWE. And so I gained a little bit of visibility through there, and did a lot of work there. And that led up to me winning the Outstanding Collegiate Member Award in 2011. And because I was kind of on the radar there, when the White House Office of Science and Technology Policy contacted SWE to look for some of the outstanding scientists that are in SWE—especially, they were looking for outstanding young scientists in SWE—SWE submitted my name for consideration. I was getting—for about a week I was getting some very strange, cryptic phone calls from the White House Science and Technology Policy office. [23:00] I wasn't really sure if they were who they said they were, but all of the email addresses checked out, the phone numbers—I could connect them to what I could see on the White House website (laughs) so I figured it must have been legit.

So they were doing interview questions about my experience as a woman in engineering, and what kind of work that I had been doing to help improve the experience for women, to improve retention of women in STEM fields—STEM being science, technology, engineering, and math. So after a couple of phone calls over a week they finally called me on a Friday, the Friday, and they said, “We'd love for you to come out to this event. We're sorry it's really last minute, but it's on Monday (laughs) and it's in DC here at the White House. So do you think you would be able to make it?” And so I scrambled around for funding, but of course SWE was really gracious in funding my travel over there. [24:00]

And so what I found out was that the event was actually called the—it was an NSF press conference with the White House and Michelle Obama, about NSF new workplace flexibility policies for the retention of more scientists. Not

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necessarily only women, but all scientists in STEM fields. And so the NSF was trying to be more of a model employer in promoting these workplace flexibility policies to make it easier for their scientists to take care of family, you know, if they have aging parents, or if they have a newborn in the family. They found that a lot of women tend to leave the field when they're feeling that it's too difficult to balance the two. And so by instituting these policies they're hoping to increase the retention of women in STEM.

So it was a really great press conference about it, a lot of dialogue going on with NSF scientists, as well as other leading scientists from other institutions around the nation talking about everything. [25:00] And of course Michelle Obama was there giving a really great speech about why it's important to keep women in STEM. And just before the event they let us go and meet Michelle Obama one-on-one, and I was so excited to meet her. I wasn't really sure what to say, so I just kind of blurted out really quickly, "Thank you for promoting women in STEM and the Society of Women Engineers! And I love your garden!" (laughs) Because of all of the things that she's doing with starting the White House garden to promote healthy eating, and organic gardening, and things like that. So it was really exciting to meet her. She was larger than life. (laughs)

TE: Do you think that there's anything else that the government can do to help retain women in STEM fields or, you know, anyone in STEM fields? [26:00] What do you think the government's role can be in that?

PW: I think that they're already making really great strides in trying to do the work— increase the workplace flexibility policies to make it easier for women to retain their jobs while they're caring for family members or for themselves. I think part of where it can be difficult is in the pipeline of the next generation of engineers and scientists. So we're seeing a lot of drops in enrollment in these types of programs across the nation, and in general people are less interested in it, perhaps because they haven't really been exposed to it, or there hasn't been a really defining moment for science in recent decades. [27:00] You know, like the way it

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was with NASA in the sixties. So there hasn't really been a generation of inspired scientists with pop culture science. So I think that there needs to be a lot more science at the forefront in order to get people more involved in it and see it as more of a cool thing again.

But one thing that they are doing quite a lot now—this particular administration—is they've started this new series of events called the Women in STEM Speakers Bureau. And I actually did organize one in Austin with the White House Office of Science and Technology Policy. So whenever they have a high ranking government official in the STEM area visiting any local towns or any local cities, they will try to connect with nonprofit organizations in the area to organize outreach events for young women or young girls that are still in school, to try to inspire them with their stories. [28:00] So we hosted Karina Edmonds, who was with the Department of Energy. So that was a really great event and we did that at the Ann Richards School for Young Women Leaders, which is an all-girls magnet school. And the feedback was really great from that. Those girls were so excited to meet Dr. Edmonds. And I think I do have one picture snapped where we asked them to answer a question. There was one girl who just—her hand shot straight up and the expression on her face about how excited she was that she knew the answer to this question, and that she could grow up to be like Karina—that was really amazing to see.

I think the other really important thing is to improve the education at the K through 12 level, definitely starting from elementary school. [29:00] It's really important to start from elementary school to put these fundamentals in. And not only in science and math classrooms, but there's a lot of schools that are now starting to have what's called a STEM classroom. So you're taking the concepts that you're learning in science—like where in the science class you're learning about scientific process, general things like earth science and forces, and masses, and things—and then also the things that you're learning in math, and then you're learning how to apply them.

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So right now I'm working with the Austin Children's Museum, working on their technology education. So I work at an elementary school doing a lot of outreach, and they have a STEM education classroom. And so what the STEM education classroom actually gives you the time to do is, you don't have to focus on just the science basics. You can actually start to apply things. So what we're doing with them is doing programming with a program called Scratch. It's kind of like a little animation programming and it's really fun. [30:00] It's fun for the kids. They can write little stories and then they can program in an animation for it. The other thing that we work with them is the Lego NXT robotic systems. And so—I mean, we didn't have that kind of thing when I was growing up, you know. And so I think when I was growing up I really—in K through 12, I was missing that application link about what I was doing with science. I mean, there were science fairs, but that's just the one semester thing and it's very transient. And whether your project goes well or not, it's debatable. (laughs) So I think education really is the key in moving forward.

TE: Okay. How have you balanced your education and obtaining your degrees with all of your other activities? I know that aside from SWE you're involved in many other organizations at your university. [31:00] Can you talk about how you choose which organizations to become involved with, and how you make it all work?

PW: Well, SWE has always been close to my heart, so I always have room for SWE. (laughs) But the great thing about it is that depending on where you are in your life and the type of experience you want to get from it, you can choose how you want to be involved. So in the beginning of graduate school I wanted a more personal interaction at a local level, so I worked to start a graduate student committee on campus under SWE. But as I got more involved in the research and I wasn't able to attend as many meetings, I started to get more involved in the SWE society-wide committees—so the collegiate leadership coaching committee, the strategic planning committee, and then also the graduate community positions as well. [32:00] So those are mostly through email, so it was

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kind of on my own time, so that's pretty flexible. You know, whenever I have—you know, when I'm in the lab sometimes I have experiments running and I have twenty minutes-odd here and there, so in those twenty minutes you can just go in and do a little bit of SWE work, answer those emails, and it made it easy to stay involved that way.

But one thing that I was really fortunate with, especially for graduate study, was having that National Science Foundation fellowship. With the National Science Foundation Graduate Research Fellowships, there's two components of it. It's having the intellectual merit—so that's the research part of your project—and then you also have to have the broader impacts criteria fulfilled. So the broader impacts could be, you know, what the implications are of your research. [33:00] But the way that I choose to look at it is the broader impacts on society and, you know, how you as a scientist can affect society and elicit change in improving the world. (laughs) Really, there's no other way to say it. Just, I'm trying to improve the world, bringing more scientists into the world. And so I've always had a lot of these type of activities, extracurricular outreach-type of things built into my fellowship.

The fellowship is only a three-year period, so after that was up I wrote a couple of research grants and, because of the broader impacts criteria for NSF grants, I really felt like the NSF is where I always wanted to get my research funding from. So I wrote a grant to the NSF for the project that I was working on with some of the preliminary data that I had gotten, and it was funded, which was really great. [34:00] I was really excited (laughs) that I could write a research grant that could get funded, you know. But definitely the broader impact criteria that I wrote in there was a lot of the activities that I was already doing, and writing in continuation for those activities as well. So my advisor has been very understanding about the broader impacts criteria that I've always been interested in working on, so he does let me have quite a lot of flexibility in my schedule to go out to the classrooms and teach, and then spend time developing curriculum, and things like that.

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TE: Okay. Now that you have successfully defended your dissertation, what next? What are your plans for the future and your goals? [35:00]

PW: (sighs, laughs) Well, let's see. I am still interested in research. I think that if I wasn't actively in pursuit of knowledge and learning that I would get bored. So right now I'm doing a postdoc with the NSF Small Business Research Grant to do a little bit of development work at the early stages for research and development in a small company. And I'll be doing that for a couple of months. At the same time, my other passion of pursuing STEM outreach activities—I'm still working at the Austin Children's Museum to do some more of their tech education, and hopefully I'll do a little bit more curriculum and content development for that. [36:00] So I'm looking for, right now, some senior scientist research positions in industry to move forward with, and then perhaps also opportunities where I can stay involved in outreach moving forward as well.

TE: Okay. Okay. Can you tell me more about the SWE committees that you've been involved in, particularly at the national level, and why those ones are interesting to you?

PW: Sure. So I'll start with the collegiate leadership coaching committee. When I was in undergrad in the University of Florida, I eventually made it up to be SWE president there in my senior year. And then after I graduated from there and moved to Austin, I wasn't really sure what was next. You know, what can you do next after being president (laughs) of a section? [37:00] I didn't really want to start over again at the bottom of the collegiate officer ranks at a new school, so one of the SWE counselors that I knew encouraged me to get involved with the SWE society-wide committees. In particular I did find that I really enjoyed mentoring some of the younger collegiate officers that would come in after me, and helping with their professional development and leadership development. So I started working with the collegiate leadership coaching committee, which does a lot of that—coaching through any conflicts that a section may have, and also providing leadership training. So I did that in Region C. So I've traveled to several

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different universities and colleges, and did leadership summits, and leadership presentations, and that's been a really fun experience, and I really enjoy doing that. It's one of the things that I continually stay involved in. [38:00]

The strategic planning committee I also started getting involved in around the time that I started graduate school. And that was a really eye opening experience, because it really has a lot of, (laughs) I guess, the really important SWE people in it—like, the SWE very important people. (laughs) I remember a lot of the people that I worked on that committee with, they've gone on to become officers in SWE. You know, president, presidents-elect, treasurers, things like that. And so it was really cool to have an experience where I could interface and get mentorship from these high-level SWE ladies, and get mentorship in what I wanted my SWE leadership development to look like. [39:00]

And so what I did on that committee was we worked on what's called the mega issues. And the mega issues are just any overarching themes in SWE, similar to a suggestion box but sometimes they involve a lot more work behind them. I did a lot of social media initiatives to try to pan for new ideas, mega issue ideas. And then at the end of each fiscal year, or towards the end of each fiscal year, I would compile all of these ideas, evaluate their feasibility and how they fit into the Society, recommend if there were any possible committees that were existing that could take ownership of these kind of issues. And that really gave me a really great overview of what SWE was like—the inner workings of SWE and how it all worked together, how all the committees really worked together. [40:00]

So I was so blown away by how highly organized and complex the structural organization was of SWE, because I thought that having thirty officers under me as a section president was pretty bad. But having so many women across the board in so many leadership positions, and they're all doing great things—like, how do you interface that together? That was a really eye opening experience. So I really enjoyed being part of the strategic planning committee and being part of the annual strategic plan review as part of that process.

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And more recently, in the past couple of years, I got more interested in the graduate offerings in SWE. So SWE a few years ago didn't have too much going on within the graduate student realm in SWE. Particularly because, probably, there wasn't that much collegiate retention in SWE. [41:00] But the collegiate interest committee in the past several years—which has now been phased out—has really made a lot of great strides to improve collegiate retention in SWE. So now we're seeing a lot more graduate students coming into SWE, and wanting to stay involved and keep in that area, like myself. You know, as a graduate student I wanted to stay involved, but I didn't know what to do next. And I wanted to get the same kind of professional development sessions that I had on campus as an undergrad. But in going to the ones that were on campus then, that the undergrads were throwing—I guess the graduate student needs are much different than what the undergraduate needs are. I mean, we need to write CVs instead of resumes, for example. And the type of career opportunities that are there for us are so different than what is there for the undergraduates. So there was really a need for a different type of professional development session for graduate students. [42:00]

So I started working on that at the local section level at UT Austin, and then trying to take that into the national level at programming at annual conference. So we started out with doing sessions about, you know, how to structure a graduate committee within your collegiate section. How to make it work symbiotically with what existing structure there already is there—in most cases the undergraduate structure. And then from there I eventually got the role of what was called the graduate programming coordinator for the WE11 Conference. So I had made a lot of connections with other graduate students that I had met, and we kind of had made a concerted effort to improve and increase the amount of graduate programming at conference.

So in that role I was officially coordinating everything, and having a whole list of sessions, or a wish list of sessions, that all of the graduate students wanted to see at conference, and then assigning people to take on those roles. [43:00] So

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in that year I think we went from, you know, only maybe six or seven sessions to fourteen, and then even more last year to eighteen. And then this year we have even more people working on it, so now we have a graduate programming coordinator and a graduate programming coordinator-elect working together. And so now we have eighteen sessions, and it's pretty incredible to see how much it's grown in just three or four years with the work of just a handful of graduate students. And we've really seen an explosion of graduate student involvement in SWE as a result.

And so from graduate programming coordinator I went on to be the graduate member coordinator, so where I was trying to foster that network. So once we leave conference, what else is there for us? Like, how do we communicate? How do we stay in touch, and then work towards bigger and better things? [44:00] So I fulfilled that role last year and started a graduate student blog. And so we've been posting updates on that, and it's been a really great resource for all of us to stay connected. And out of that we've gotten a lot of great support from the board of directors from SWE with all of our efforts. And so that led to the chartering of a SWE graduate student task force, which I am currently the chair of. And so that spanned about a year and a half, over a fiscal year, so it'll sunset at the end of this year, fiscal year 2013. But we're working on a number of different recommendations for what graduate programming, and branding, and services should be offered by SWE for graduate students, what type of leadership positions there should be. You know, whether or not we should make a committee or not. And so I'm really excited to see what kind of things we're going to see moving forward from that.

TE: Excellent. [45:00] What have you personally gotten out of SWE, aside from some great connections that have landed you in the White House and Switzerland?
(laughs)

PW: (laughs) I mean, with SWE it's a lot about the network that you form. I mean, it's a huge network, but the people that you meet—it feels like such a small

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community that once you meet someone in SWE in your own area, that it feels like you already have a natural connection and you can talk about things, and you feel like you share a lot of passion behind the same issues. I spoke a little bit earlier about how a lot of my SWE friends have been really my champions in life, you know, encouraging me to pursue things that I otherwise would not have pursued. [46:00] For example, if I hadn't had a lot of SWE friends in graduate school to encourage me to continue on with trying to fight for graduate programming in SWE it probably never would have gone anywhere.

And then also getting through my PhD—I mean, there's a lot of low moments in your PhD, and it's really helpful to have that SWE graduate committee there. I mean, in my lab, although there was a lot of women in my lab who—we're all pretty good friends. At the same time, we're also work colleagues and so I can't talk to them about conflicts that I'm having with them. And you can talk about these kind of things with your SWE friends, and they can offer support and advice for how to deal with it. And sometimes it's the simple fact of knowing that somebody else is going through a similar experience and that you're not alone in it. [47:00] And so it really has helped me, I guess, keep on going throughout the years.

And I really think that it's also great that SWE does so much to promote all of the great accomplishments of their members. I mean, in particular I have gotten a lot of recognition just at the University of Texas at Austin just for all of the SWE things that I've been doing. And I didn't think that UT would care because it's not directly affecting them. Usually they like to award people who are improving the UT environment. But SWE sends letters out to your employer if you're in a committee chair or coordinator position, you know, saying, "Look, this person is doing all of these great things in SWE. Thank you so much for supporting them, and they're doing a great job." [48:00] And so because of that letter, my department chair read that and he sent out all of these news bulletins about, you know, "Prinda Wanakule selected as SWE task force chair." And, you know,

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people stop me in the hallway and congratulate me, and say congratulations on being selected as this, and that, and whatever.

And the recognition in being able to go to the White House—I mean, I can't imagine ten years ago having all of the opportunities that I've had through SWE. And so, you know, I think about that first SWE meeting I went to as an undergrad about ten years ago now—just under ten years now—and I never would have thought that I could have come this far in SWE and that I could have had all of these things. And I never knew that walking into that one first SWE meeting, that was probably—it really shaped my life moving forward. [49:00] You know, it had such a meaningful impact on my life in a way that you really can't define or explain until you've lived through it, you know.

TE: Okay. What is your advice for aspiring women engineers?

PW: Be persistent. Things can be frustrating a lot of times. You might not always feel the support and encouragement from your colleagues, but you can always find that support somewhere, especially through SWE. And, you know, when I first started out in college, I really enjoyed Calculus II, but as I kept on going through I felt like it was getting harder and harder, and it was getting more frustrating, and sometimes I did think, How am I going to get through this class? [50:00] How am I going to balance this workload? But in the end you just take a breath, and you take it one step at a time, and you can really get through it.

I would really encourage going out and getting involved in some sort of organization where you can find your support network, because that was really key in helping me deal with a lot of things moving forward. And finding other opportunities aside from just the classroom, finding something hands-on learning. I mean, when you finally get to a job you're not going to be sitting at a desk studying all day. You're going to be having to apply all of these things. So doing all these application-based learning kind of things are really going to be where you'll learn the most. [51:00]

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I guess for younger women, I guess younger girls, take a look at the world around you and try to be curious about how do things work. You know, if you're curious about how things work, of course you're a natural engineer, right? But think about that plastic cup that you're drinking out of, or the backpack that you're carrying around, you know? What type of engineering things had to be involved in inventing that? I mean, engineers really have created the world around you and everything that you work in. And so even though it might not seem like it when you're in a day-to-day job, or you know somebody who's working in a day-to-day job, engineers really have shaped the world around you and they really do have a really big impact on society. So it's a meaningful job to be involved in. [52:00] You know, it's not dramatized like the way that medical residents and doctors are, you know, in popular media. But at the end of the day it's a really good, oftentimes nine-to-five job. (laughs) You don't have to be on-call in all of these positions. It's a really rewarding career. And there's nothing like being able to figure out how the world around you works, which you learn how to do as an engineer. And so yeah, stick with it. (laughs)

TE: Is there anything else you would like to share?

PW: No, I think that's it.

TE: Okay well thank you very much for joining me, and this is the end of the interview.

[END OF INTERVIEW]