SWE GRASSROOTS ORAL HISTORY PROJECT

Susan Parsons Interview

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This oral history interview was recorded as part of the SWE Grassroots Oral History Project on October 13, 2011 at the Society of Women Engineers WE11 Annual Conference in Chicago, Illinois. A copy of the audio recording of the interview has been deposited at the Walter P. Reuther Library and Archives of Labor and Urban Affairs, Wayne State University. The interview may be used for research and educational purposes only.

TROY ELLER: Okay, today is October 13, 2011. This is an interview with Susan Parsons. We are at the Society of Women Engineers National Conference in Chicago, Illinois. The interview is part of the SWE Grassroots Oral History Project, and the interviewer is Troy Eller. Sue is a senior life member and a Fellow of the Society of Women Engineers and has held numerous positions within the Society. She is currently the contract director in the Technical Programs Group of CGI Federal, Inc. And thank you for joining me today.

SUE PARSONS: Thank you for having me.

TE: To begin with, can you tell me a little bit about where you were born and grew up, and what your parents did.

SP: I grew up in a small town in Minnesota called Saint James. It's in a farming community, and the town has a population of about five thousand. My graduating class from high school was a 130, so it's pretty small. [01:00] My dad is an MD. And he left college in the fifties, and he and another college mate of his set up their practice in Saint James. And he was general practice, surgery, OB/GYN—anything that the community needed, that's what he did. And they just retired in January of this year—a long career. My mother was actually a clothing designer. She went to an art school here in Chicago, grew up in Chicago. And they met in the Minneapolis/Saint-Paul area. In fact, in the last couple of years of my Dad's college, she helped put him through college while she worked at Munsingwear designing bras and girdles. (laughs)

And one of the things I would remember—I come from a large family. I have four sisters and one brother. [02:00] We were always encouraged to study hard, get good grades, and I think as a team my parents encouraged us to be open to possibilities. We never had any other idea that we were going anywhere but college. So from a very early age, I remember just knowing I was going to go to college. I think my parents gave us the ability to experience things. We took family vacations. We tried different things. They encouraged us to try different

kinds of activities, arts and activities in school to become what we wanted to become, and they didn't push us in any particular direction.

I had exposure to engineering—very limited when I was growing up, although on my dad's side he has two brothers who were engineers, and another brother who was a lawyer, and a sister who was in social work, teaching. [03:00] So again, a very educated family. But I got out of high school—and I was exposed to math, which was my absolute favorite topic. I knew that I was going to go college and study math as part of something, but I entered college without having an idea at all what I was going to do. I peripherally knew what engineering was. I knew that my uncles were engineers, but I never really had an opportunity to talk to them about it. And it didn't seem anything different than you just get together with family, and you just wouldn't talk about it. It was just family things.

So, when I got to college, I studied—the whole first year was general liberal arts, except for the calculus which I took and I loved. My sophomore year they were saying. "Well you have got to decide on a major." [04:00] And I looked at what I could do and what I was good at. By that time I was taking physics, and they said, "Oh, it looks like you are going to be an engineer." But I had no idea what the different disciplines were. At the University of Minnesota—which is a great school by the way—I had the opportunity to try a number of different intro courses to different engineering. There was an—electrical engineering, civil engineering, mechanical engineering and aerospace engineering were the four that I took. I came out of those, and out of all of those I was fascinated by the aerospace side. But I will say that once I chose aerospace engineering, I had catching up to do, because there were some prerequisites they required—like flow dynamics and things like that—that I had to hurry up and get. So I didn't graduate on time, but I did get a degree in aerospace engineering mechanics. [05:00]

I look at my college days and I think about the students that I shared time with and got to know. There were several people there that I met that knew from an

early age that they wanted to be an aerospace engineer. I talked to several people since who said, “Oh, when Sputnik went up it inspired me.” Or, “When we went to the moon, it inspired me.” I think I was fascinated by the technology, but I didn’t put two and two together. So I think I was very different from my other colleagues in school in that respect. I knew that I liked the technology, but putting it to work was a little bit hard. I didn’t really have any hands-on experience with assembling things, taking things apart, like some of those that I call, “native engineers,” (laughs) but it was—I don’t think I was unprepared for the workplace. [06:00] But it was a good education, and I look back at my time at the University of Minnesota and I think, “That’s a place where I could’ve done anything.” My dad said the same thing, “If you are going to go to school, go to a school that has everything, and then you can narrow it down. Try a lot of different things and then become what you want to be.”

TE: Okay. What was your experience as a woman engineer in the aerospace program in college?

SP: There were very few women in aerospace. There were a few in the class just behind me, and just a sprinkling in my class. But the aerospace class in itself was pretty small, so you would have a graduating class at my time of about twenty-five aerospace engineers. And out of that, maybe one or two were women, if you were lucky. [07:00] I made friends with a couple of them, but there is one friend of mine that I keep in close contact with. And she was actually a math major from a different college, and she came to the University of Minnesota to work on her master’s in aerospace engineering. She had been a pilot and she was just fascinated by that, so she and I kind of stuck together as we made our way through some of the same courses.

But there were no professors in engineering that I saw that were women at the University of Minnesota, at that time. I look back and I think what might have happened or how I might have been inspired had I had a woman in a position like that. Because nowadays there are quite a few women in aerospace or in

engineering in general. So I had seen women professors in math, I had seen them in physics, but not in the engineering department.

TE: Did you feel like you were lacking some sort of guidance from female faculty, or—? [08:00]

SP: I think role models would have been helpful. I did an interesting thing when I went to college, though. In my first year, I went to college and I wanted to meet people. And so I was living in the dorm, but that fall I went through the sorority rush. I decided because I was living in the dorm that I wasn't going to pledge at that time. So I went through rush in the fall and didn't pledge. And then in the spring, I went through rush again and that time I did pledge. So from my sophomore year through my senior year I was living in a sorority. I had an interesting experience because I was with women in my living situation, and going to school with men. (laughs) And that was a little odd. But there were some really outstanding women that I met and could look at as role models—not necessarily in my field of choice, but in school. [09:00]

TE: What were your professional goals when you decided to pursue aerospace?

SP: Well, the thing that fascinated me about aerospace when I took that intro course was—there was a professor, Dr. Heinrich, who taught aerospace. And he had come from Germany, and he was an expert in parachutes and balloons and things like that. And just his excitement about it—in telling us about what he did and all the experiments that he had done and the uses of these tools—was fascinating. So I really wanted to work for an aerospace company and I wanted to get into management ultimately. This was about the time when people talking about business and engineering being a good combination. [10:00] So I knew I wanted to go out and do the engineering. I wanted to work for an aerospace company. I also knew I wanted to move to California, because I had lived in Minnesota all my life. So when I was choosing my first job, I interviewed a number of companies and then ended up selecting Douglas Aircraft. I got to work in a company that built airplanes and had a career path, or so I perceived.

TE: Were there many women—there were only one of two women in your engineering classes. How did your male colleagues interact with you? Did you feel accepted? Did you feel like part of their team?

SP: I studied with them. There were a number of study groups. [11:00] I started studying with the male colleagues during physics, when we were trying to make it through physics, and then through some of the other courses. So I think we were all accepted as colleagues. I didn't see from the student standpoint that there was a whole lot of bias. People didn't mistreat us as students, and frankly I was not aware enough at that time to think that there were any professors showing any favoritism, either. But there were so few women the guys knew who we were, but we didn't necessarily know who the guys were. (laughs)

TE: Right.

SP: But it wasn't a bad environment. I didn't feel like there was any particular bias that I was experiencing

TE: So what was your experience joining Douglas Aircraft?

SP: Douglas Aircraft had for a number of years not hired young people, and so their engineering force was aging. [12:00] This happened to be a time when they were. They must have decided this was the time. They had just hired some the year prior to my joining in 1978, and it was just a wave of young people coming in from the colleges. There weren't very many women engineers initially, but there became a number of them coming in. But one of the things that as I was looking back and preparing for this interview—I thought about Douglas Aircraft and there were women in management positions there that, as I look back, had to be pretty unique. There were a couple of women that I'll cite that I remember. Didn't work directly with them, but there was a woman, Mary Elgin [sp?], and another woman, Ann Ebeling. They were both aerospace engineers and worked in the aerospace department in very technical R&D [research and development] areas, in aerodynamics and fluid dynamics. [13:00] And they were in

management positions in 1978 when I was there. And it was fascinating because people would talk about them and about the things that there were doing, and all of a sudden here it was presented to me that there were people in that way. Now another one is Marlynn Lloyd, who actually was very involved in the Society of Women Engineers, and I met her some years later. I thought she was aerospace, but she may been more in the structure side. But she was very active in SWE and very much the mentor to a lot of the SWE members. So I look back and I say, “Well, there weren’t that many women.” We were trying to make our way just like the young men were. [14:00]

But I got the opportunity at Douglas to work on some fascinating things. I studied aerospace engineering fluid dynamics, and I immediately went to a job at Douglas where I was doing fluid dynamics. I was working on models of engines. I was working on the dream job. We were doing computational fluids, so I was working computer things as well as hands-on with the models. I talked to other people who got into their jobs, and it wasn’t that interesting. But I had all this interest going. We were working on DC-10s, from an R&D standpoint, on exhaust systems. And we were designing the nozzles—they called them daisy nozzles—for these engines. And it was just fascinating work. And then that transitioned into working on the DC-8 re-engine program where, as it says, we were re-engining old DC-8s with new engines. [15:00] There I got to learn a little bit more about the engine performance side of things. But I look at that as such a great launching place for my career.

When I moved to Northrop-Grumman, I went from an environment that was very commercial-oriented to one that was extremely military-oriented. So very male-dominated, but also the level of technology was a step up, I felt. The first program I worked on was the B-2 bomber, and I couldn’t even tell people what I was working on. So that was a fascinating opportunity to work with very, very sharp engineers and technical experts in fields that I hadn’t even dreamed of. So I have to say that that was—that I got the best of all worlds in those jobs that I worked on. [16:00]

TE: You said that Northrop Grumman was very male-dominated. How did that affect your career? Or did it?

SP: I looked at it initially as an opportunity. I thought, "Oh, there aren't that many women in management." I was already started on my master's in business at that time, and I thought, "Well, this will be an opportunity. I'll move into management." That's what I wanted to do all along. And so I looked at that as an opportunity. I felt, though, that it took longer than it should have taken for me to get where I wanted. I'm not saying that I didn't get opportunities, because I think you prove yourself and then you do advance. But I think that there were—it wasn't as rapid as I saw some other people make it. I worked there for eighteen years, and through all of that I went from engineering to program planning, then R&D management, and then into marketing. [17:00] And I saw women getting better positions in the company, but still at the higher levels it was very male-dominated.

TE: Did you have any strategies of how you would deal with that? Or did you have any ideas of how you could break through?

SP: There were a number of things. Of course, the Society of Women Engineers helped, because there was a group, a lot of women my age and we came together and we bonded, and we shared stories, and we talked about ways to get ahead. We tried to look at the company and take advantage of every opportunity that's out there. [18:00] And I think that that was the encouragement, if somebody who was saying, "Well, if you try this or you get on this project—," or kind of point you in the right direction, that helped. But also the mentorship of some of the older women in the Los Angeles Section when I joined were very encouraging. But also mentors in the organization, and they helped by giving you techniques. And then we'd go to conferences and different courses. That all kind of comes together and helps enhance what was already there in your career.

TE: What about your male colleagues who were at a similar level? Did you experience any resistance from them, or were they teammates with you?

SP: I think it's interesting that those that were—. There were some that were—most of them were encouraging. [19:00] At our level, everybody was kind of in it together. I never felt that our level was necessarily discriminatory. But there were certain people that you knew that didn't really want to see you get ahead, or people who could see a flaw and instead of helping you through it, they just let you survive whatever way you would—or not survive. So there people—some of them were hands-off, but there were some that were very hands-on and tried to help you through that. And so, you get all kinds of different folks in your career to be able to help you out.

TE: Do you have any memorable experiences from your early career? [20:00] Triumphs or difficulties, or—?

SP: One of the fascinating things was, like I said, in my Douglas career was being able to go and in the early years actually go to a test and kind of be the lead there. I was still in constant contact with the folks back in Long Beach. But for instance, there was a test facility in the Twin Cities area called FluiDyne, and we would go and we would test some of our concepts out at model scale. The first time I went there I went with my boss, and he kind of guided me through. The next time I went, I was there and he was back in the office, and we kept in contact. But that was a good learning experience, because the people at FluiDyne were helpful as well. [21:00] It wasn't just my learning from the folks in my office, but the people at FluiDyne were very helpful as well in learning. And when I was at Northrop Grumman—Northrop, at the time—working on the B-2, we had tests at various wind tunnels. One test that we went on was at the NASA facility in Langley, Virginia. And I remember going, and I worked with really one of the smartest engineers I've ever worked with, Wilfred Long. They were doing inlet testing, and then we were doing some of the exhaust testing. And just being in that environment—you're with your colleagues night and day, and you are working on this wind tunnel test, gathering the data, and then studying the data, and then revising the test. It was just a fascinating experience, and I wouldn't trade it for anything. [22:00]

TE: Okay, let's see. You've covered some of these questions already. Why did you decide to pursue your MBA, and why did you decide to do it when you did?

SP: I decided to pursue it actually when I was graduating from college. Aerospace engineers don't as a rule get a PE [professional engineer's license]. And everybody said, "Oh, you should take the EIT [Engineer in Training exam] before you get too much farther away from your schooling." And I said no, I don't want to take the EIT because I knew that wasn't going to have a need for a PE, so why waste my time? And so I didn't. But when I was graduating—this is when MBAs were starting to come into play. And I knew I wanted to get into management, but I also knew that I wanted to get the experience first. It turned out that that was the right thing to do, and of course I was just in a session earlier today [at the SWE conference] where they said, "My advice is that get your MBA after you have had some years of experience." [23:00] And I would strongly encourage that. But the whole idea was I knew I wanted to be in management, and I knew that I didn't want to do the hands-on engineering my entire career. At least that's what I thought.

So after a couple of years at Douglas I decided I was going to get my MBA. Douglas wasn't paying for them, because they had had too many experiences where they paid for somebody's MBA and then they trotted off to another company. And I certainly understood that. So I started, and was paying for my own way. School was a little cheaper then. I could go to night school, and I went to California State University at Long Beach, which was very close to where I lived. And it did, it opened up a wide range of experiences that—I had taken some economics but really hadn't put it in context, learned a little bit about marketing and the business aspects of finance, and even some contract law. [24:00] It was just fascinating, and it did augment everything that I was learning, and I think that over the course of my career, it did help me to be a better businessperson. Engineers as a rule, at least when I was going through school, didn't get business courses. You got all these technical courses. And this

business course helped you to be a broader person who could address the business side as well as the technical side. And I really did enjoy that.

It helped so many times when I was back to doing—when I did the R&D management, there was a lot of looking at what was profitable or where the future of technologies were going. [25:00] What was going to be actually something you could sell or put on to an existing product? And that certainly helped to formulate some ideas in my mind. It also put me into a different set of people. It put you into people with a different perspective, and I think it allowed me to look back and help other people as I mentored them, to be able to look at their careers a little more broadly.

TE: Can you tell me, how did you balance completing your MBA at night while working and, you know, having a life?

SP: (laughs) I have to say it just becomes natural. In fact, the way that I did it at Cal State University in Long Beach, I didn't have a lot of the prerequisites that they required. It took me four years of night school, whereas some courses could be done faster. [26:00] My husband was actually taking a course, an MBA course about the same time, and he finished up in twenty-one months. I finished up after four years. I don't know whose experience was better. I know that I seemed to be a little bit less stressed out than he was. I think it was—at the time what else are you going to do, right? I didn't have a family, so I didn't have any of those time constraints. It was just, "That was my day, and that was my night." (laughs) And my weekends were spent studying.

TE: Right. What drew you to management? You said that you didn't think that you wanted to be in a technical career for the duration of your career. What was it that drew you to management?

SP: I think the people. I wanted to work—even though one of the aspects of engineering that surprised me more than anything was the people aspect. [27:00] You think about engineers being insular, and you're working on your

project and you don't realize how much of a team activity it is. And that was something that was eye-opening to me coming out of school—having not done engineering—that you did work on a team. But one of the things that fascinated me about management and drew me to it was the fact of leading other people and having a broader view of the technology or the product, not just the narrow thing that you were working on. I didn't want to become an expert in just one thing. I wanted to be more of a generalist.

TE: Okay. You left Northrop Grumman in 1999. Can you tell me why you decided to make a switch to a new company?

SP: At the time, Northrop Grumman was going—well, actually, the whole defense industry had kind of had a lull. [28:00] And I didn't like what I was doing at the time, and I didn't know where I wanted to go. And another company offered me a position as a vice president of business development for them, and it was a move. So there several aspects about it: it was change, it was a completely different location, it was a new job with a really fascinating title as vice president of marketing. And I just decided to move, and my husband came with me. We both left Northrop Grumman and moved to the East Coast. A lot of people say that's a crazy move, but we did it. And I worked at the job for about a year, and I realized it just wasn't for me. And they did too. We parted ways. And it was a hard year. I learned a lot about myself during that year. [29:00] I took a course in marketing and challenged myself to get better at it, but decided that that really wasn't the career for me.

When I came out of it, I joined a company called DFI International, where I became a program manager and I managed Air Force programs. It was a consulting firm, so there were no engineers to speak of there. They were doing international relations, political science-type work for the government, and it was fascinating. I enjoyed it immensely. That job went for a couple of years, and the company needed somebody who had some experience in contracts. And my job while I was at Northrop, we were doing R&D and we were doing proposals and

learning about contracts. I took some courses from UCLA on contracts. So when DFI needed somebody with a contracts background, I had enough contracts background to take over as the head of their contracts department. [30:00] And that's kind of the beginning of this career, that has brought me where I am today.

TE: Can you talk more about what you do now?

SP: Today what I do is I manage a team of contract administrators, contract managers. They work directly with the customers on the contracts. We negotiate agreements. We work with the proposal teams as they develop the proposals. We remain as the contact between us and sometimes the prime contractors or with the government customers. I like the relationship aspect. I think I'm pretty good at the legal aspect, something that was a surprise to me. And when we talk about the type of work or the statement of work, I am still working for a consulting company but it's much more oriented in engineering now at CGI. [31:00] They do IT, and they do engineering support and program management support to a number of federal government agencies. And it's just a very satisfying job. I would have never thought that that's what I wanted to do, but that's the joy of being an engineer. It helps you learn how to think, and then the world is full of possibilities that you could go to.

TE: Do you think that being a woman has impacted the trajectory of your career differently than if you were male?

SP: I do think so. I think that there might have been more encouragement at a very young age. [32:00] I don't think in my family it made much of a difference, but I don't think that—. The teachers in elementary school and in high school were thinking of female careers for us. I don't think that there were very many people thinking about technical careers for women. I feel like the exposure—I missed something in the exposure. And that's part of what draws me to the Society of Women Engineers, is I don't feel like I have missed anything in my career, but I think about—there could have been a different path for me had I had an earlier exposure to engineering.

When I first got started with the Society of Women Engineers in Los Angeles, I gravitated to things that were career-oriented. The first job that I took as a volunteer was job opportunities. And there all kinds of companies that were coming to us with job opportunities, and we tried to share them with our members. [33:00] So that they could see, if they wanted to change companies, here are some opportunities for you. And they [the companies] were coming to us all the time. They wanted us to give them lists of names. Of course, we couldn't do that. But it was a very low-level volunteer position. And from then on I went into working on the newsletter and then the scholarship.

And then in 1988 my mother died. And after she died I was really in a funk. And to get me out of it, I decided that I wanted to do something that—she was active in the community, very active in our church, and I wanted to do something that gave back. So I went to Toastmasters and learned how to speak, and then started to speak to high school students and elementary school students. [34:00] At Northrop Grumman I actually had a—we started a program for a National Engineers Week, where we went to a local school and we'd get engineers to go out and speak to the science and math classes. And I really enjoyed that, because here you were giving them something that I feel like I missed out on. And that's the whole idea, that I believe that SWE has the ability to do—is to deploy a lot of people out to give those students that exposure. And I think that that kind of thing would have changed my career. I also think it might have changed perspectives—all the way from elementary school all the way up—had people had a more encouraging perspective for women. I don't think that they necessarily knew that they were—I don't think there was any discrimination that they were doing on purpose. [35:00] I just think that it wasn't in people's nature to encourage us to do these things.

TE: Why did you decide to become involved in SWE nationally?

SP: Well, it's like a virus. (laughs) Once you get bit it's hard to shake it. The more I did with the Society of Women Engineers, I look back now and I think that there

were lulls in my career where I would get more involved because it was enriching me in a number of different ways. It was giving me new skills, it was giving me new connections, and maybe there was something lacking in my career at that time that I would throw myself into it. But there were different opportunities that would present themselves. [36:00]

After I had gone through the leadership of the section—and I had been treasurer a couple of times, I was a section rep, I was president twice, and I think I might have been vice president, maybe even secretary—then we were going around to different meetings. In the early ‘90s—or in the late ‘80s, actually, and the early ‘90s—we were getting ready for a conference that was different than most national conferences. The national convention used to be hosted by a local section, and the Society was trying to get away from that. And the year that we were part of it, the region actually was the host for it. And this was in San Diego. And I got involved in that. As we were putting that together, I was working on the continuing development side of it with Anita Gale from Boeing. [37:00] And as she was working on the technical presentations, I was working on the continuing development side. And it was just so fascinating. We had meetings all over the region. Sometimes it was in Phoenix, Tucson, Las Vegas, Albuquerque, southern California, San Diego. We had meetings all over in the years building up to that [conference], and then of course the thing happened. I got to meet so many interesting people and had exposure to so many different ways to get involved, that that was just such a great experience.

And you realize, as you expand your realm of influence in the Society, you get to know so many people and you understand it a lot better, and get involved in the structure of the organization, and in the planning and in the strategic way that SWE is looking out and ahead. Not just the hands-on, but now more strategically. [38:00] And I saw that there were a lot of my management capabilities that could be applied. I was involved in the region—not just on the conference but also on the region board. I didn’t become a director because the involvement can kind of take over. And I will say that I have seen this in a

number of people, but it was especially true for me. I felt like sometimes it would take over, and I didn't give attention to my own personal life like I ought to.

The one great experience I treasure very much is my time on the editorial board. It was Debra Evans who advised me. She had been on the editorial board, and she was leaving the editorial board. And usually when you left the editorial board, you tried to find somebody to replace you on it. [39:00] I had been doing the Los Angeles newsletter for a number of years, and she said, "Then why don't you try this." And I had no idea what I was getting myself into. So I joined the editorial board, got to know Anne Perusek, who is just a fabulous editor, and we worked together as a team. The whole board would meet once a year—actually twice a year. We would meet once at conference, and then we'd meet in the wintertime. We'd meet someplace else, and it was usually Chicago because by this time we had our headquarters in Chicago.

But it was such a great way to look ahead and think about how you are reaching out to the entire Society, and what's going to be interesting to them, and what is going to be informative to them. And then who can we tap to help us do this? Because in the early days of the editorial board, you were just reaching out finding volunteers to write these articles. [40:00] And it was—who is good in the field, and try to find somebody in SWE. It was all about networks, and then about keeping your eye on what is hot in technology that we can talk about. And we'd try to have themes for every magazine. And we'd plan ahead, and we would all be working these different things. It was a lot of work when I think of it, but it was so enriching because when you get done there would be that magazine. And you could show it, and even though your name maybe wasn't on the article, you could share it with people and say, "That was one of the articles that I helped get." That was just very enriching.

And like I say, I was on the board for a number of years. And then I was editorial board chair for a couple of years, which meant that even more so was working with Anne on the ideas and the planning ahead. [41:00] And she is just such a

great visionary on how the magazine could grow and change and become more and more professional. I just think it is just such a wonderful product, and we are lucky to have her. And we are lucky to have a magazine, because you see magazines all the time that either have a lot of advertisements and no content, or there is a lot of content but it doesn't resonate with people, and therefore people don't open the magazine or look at it. And I think we have the best of everything.

TE: Can you talk more about how you decided how you wanted to shape the magazine, how you decided we want to take the magazine in this direction?

SP: It wasn't really me. It was her. [42:00] Anne had the concept. We went from more of a volunteer situation to planning out the issues. And she found some writers who were good who could take a topic, so that instead of just finding people who knew that topic, we could find somebody who could write who could then help craft the story. And that made it more interesting and easier to read. But we also tried to get a variety—not just technical stories, not just people stories, but a variety. And she has added so many different features. You've got things where you get stories about women who are excelling across the country. I love that, when you can read about people and you can look and say, "Oh, that person is in my section area," or something. [43:00] So it's trying to give people—take it from what it was before that really met the times, and then expand with the times. I love the—well, she knows that I love the history, the women's history side of it. And every time there is something with women's history I am just drawn to it, whether it's Society history, or history of the profession, or just a general story about somebody who was a pioneer. Those are just fascinating to me.

TE: How do you think your involvement in SWE impacted your career? Or did it?

SP: Well, as I said, there were so many times where I learned something—how to organize a conference by participating in a conference. Well, that paid back later in my career in project management, when you have to organize a project or plan out staffing of something. [44:00] Working with volunteers—that is one of

the more challenging things of any volunteer organization. But understanding that you have to help them to be motivated to do what they do, but also try to have them learn something, so that they begin to draw—that it's not just, "I just don't need a body to do this, I need somebody who really believes in it." And then, you can also show them the value of what they are learning from that. You have to make that connection with people for them to stay. And there are a lot of activities, and I think more now, with the Society of Women Engineers where you can make that happen.

But we had a speaker who was an Upward Mobility Award recipient, and she came to speak at the Los Angeles Section. [45:00] And she said that she was an executive at Exxon—Exxon, I think. Anyway, she gave her talk and she said, "One of the things that people don't realize when you read my bio, and it has I am a board member this, board member of this, board member of that—you don't realize that when they first came to me, and they said, 'You're an executive now. We would like you to be on the Board of this company.'" She said, "What they meant was they just don't want you to lend your name to that company, they actually want you to actively be involved." So a lot of times there are two prongs to that. One is you have to give up your time, and you also have to give up some money, because you will have to invest in the company or the group that you are supporting. So yes, when you get certain levels on a board, there is going to be some pay associated with it. [46:00] But it never compensates you necessarily for the time you give up to do these things. But those are enriching things. And everybody thinks that you would be proud to be on that board, but it isn't just your name that goes on it. It's you. And one of the starting places for people—and I recognize this—was the board of directors of the Society of Women Engineers. A lot of our board members who are really involved in the business side of the Society make that part of their career. It's a learning place. Everything we do here gives back to you ten times more.

TE: Did your employers know about your involvement in SWE. Did they support it? [47:00]

SP: When I went to Northrop Grumman in 1981, I had not joined, but in 1984 I joined. And they actually made me a corporate member, which meant that they paid my dues. And being at the early years of your career, that was pretty nice that they paid the dues. And at the time I was just getting involved—in the late '80s I was just getting involved and I thought, well, they [Northrop Grumman] had no requirement for you to actually give back to the Society while you were doing this. And I felt that was very interesting. It would have been nice it they had. But in later years then they start to see that as a benefit, because if you go out and you do something that gets recognized and your name is on there—and the fact that I worked for Northrop or Northrop Grumman is out there—they recognize it.

They started out with a very small booth at our conference, at our annual conventions, and it was maybe one or two of us. [48:00] In fact, one of the first years it was just two of us, and we had to work the whole time at the booth. So you come to convention and you would be at that booth the whole time. But we were out there sharing the name of the company, and people started to associate that. And as time has gone out, Northrop Grumman is now one of the big supporters of the Society for Women Engineers. And I think it was those early years that helped. And the company has grown and has absorbed a lot of companies who had been involved in SWE, as well. But it does help the company to have that image out there. Most of the time while I was at Northrop, they were very supportive of me going to conference. When you come to conference and you are paid, that is just golden because you know that there are so many companies that don't.

TE: Right. [49:00] How do you think things have changed for women engineers since when you started your career?

SP: I think there's more opportunities. There really are. Unfortunately, I don't see the numbers in colleges up as high as you would hope after all these years. But I think there's more opportunities. I think women are stronger about pushing to get those opportunities. I think we've strengthened women, and hopefully women are

supporting other women by being mentors and coaching them to achieve the things that they can. They're also having the impact that—all companies are going through this flex time thing, but I think that's been influenced by the women who have—you know, women have alternate schedules, but they work them very hard. [50:00] I think that more companies are recognizing that there is more flexibility in the workplace, and they can be flexible not just with women, but with men as well, and that happy employees are more productive over all. So I think the women are having more of an influence that way. I see more variety in the things that people are putting together. And I think that the women are multitasking—not in a bad way, but in a good way. You see more multidisciplinary teams under women. I think that that's a great influence. And I think that they are impacting everybody to think more of the human side of things.

TE: Are there any aspects where things have stayed the same for women? [51:00]

SP: Hard to say. I would say that there are more opportunities, so I don't think that's the same. I think that there may be some, at the younger ages, where you still have to push harder to get them exposed to engineering. There was a fellow that I worked with at Northrop, and he said, "I am so supportive of women in engineering." And I said, "Well, that's great." And he said, "But you know what, I'm not really interested in it. And I think that it's money that is wasted, if we spend it on these special things for girls in high school." And I said, "Well, why would that be, if you are supportive of women in engineering?" He said, "I've talked to a lot of women engineers, and most of them had a father or an uncle or somebody in their life." And he said, "I just don't think that women can get ahead unless they have that. So if they already have that, then they don't need anything else." [52:00] And I said, "Well, that's the exact opposite. Why does somebody have to have an engineer in the family to be encouraged to be an engineer? That doesn't happen with boys. I mean, boys don't necessarily have to have a role model in the family who did that. They pursue it because that's their interest. That's what we want women to be. We want women to have the exact same

opportunities, to experience these careers opportunities in an environment where they can play with them. And I think play is a big part of it."

TE: What was his response?

SP: He said, "Well, I just don't agree."

TE: Could you tell about some of the other organizations that you are involved in?

SP: When I was in the Los Angeles area, my friends got me involved in science fair judging. [53:00] The LA County Science Fair is a huge effort, and they have science fair judging. You take about three quarters of your day off to do the judging, and I just found that really to be a fun event. You got to meet some really sharp students and see amazing projects. The really top notch ones are doing engineering-level work, and it was inspiring. So I got involved in that. And because I love math, the local professional engineering society was doing MATHCOUNTS. And one of the first events I went to was on the *Queen Mary* [retired British ship docked at Long Beach as a hotel]. I can't remember what year it was. It had to be one of the first years that MATHCOUNTS happened, and it was so disorganized. We went down to the *Queen Mary*, and it was a great venue for it, but there was total chaos. [54:00] And every time that it was held after that, it just got better and better. And so I was involved in that for probably over ten years, and eventually they were holding it every year at the University of California at Irvine. And I just loved it because there's four different aspects to the testing. And the kids are amazing, and it's middle school kids. And I just loved that event, and it's still happening today. The emphasis was that math can be fun, and getting kids at a young age to participate was just a great thing.

When I moved to [Washington] DC, I said, "I'm taking a step back, changing my career. I'm busy with my job." I said, "I don't want to get too overly committed." And they [SWE Baltimore/Washington Section] said, "Well, we have this District of Columbia Council of Engineering and Architectural Societies. [55:00] They

meet once a month for eight months out of the year, and you just attend the meetings. And it's a good way for us, for the Society of Women Engineers, to connect with the different engineering organizations." Well I started to attend those and did that for a while. That's when I got this whole circle of colleagues in that organization. First year, I was just a member. The next year, I was secretary. Then I was vice president, and then I was president, and now I'm past president and now historian for it. What that has done is expose me to all the different engineering organizations in the area and try to bring them together for Engineers Week activities. And, that has been really fun. What I have done is I've able to encourage the section to nominate our members for their awards. [56:00] And we've had several of our members that were selected to receive awards, and it gives such a great way to recognize members in our organization and have them recognized by their colleagues. So that's been a great, great thing.

I get myself in different organizations. I love to volunteer, sometimes too much so I have to hold myself back. One of the things I said when I was in LA was, "I really don't know how to say no." I've learned a little bit more about how to say no. (laughs) But there are so many different groups that you could get involved in. And in SWE, of course, we are doing Girl Scouts. They need somebody for Girl Scouts? I'll go do Girl Scouts. Or we had the event on the [National] Mall last fall, and I went to do that. [57:00] Every year in DC, they have—the Saturday before Engineers Week, they have a Family Day. It's held at the Building Museum, and a number of professional societies have booths where they have little activities for the kids. And the Society of Women Engineers has been doing this for years. We have had puff mobiles [wind-powered model cars] there. We've had build-a-bridge. We also help them make slime. We team up with different groups. There are thousands of kids. You are reaching thousands of kids, and that's just a fun, fun day. So I love the outreach.

TE: Alright. Do you have anything else that you would like to add or talk about?

SP: I don't think so.

TE: No? Alright. Well thank you very much for doing this interview. And this is the end.

[END OF RECORDING]