SWE GRASSROOTS ORAL HISTORY PROJECT

Peggy Layne Interview

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Society Of Women Engineers National Conference

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Margaret "Peggy" Layne has been the director of AdvanceVT and Faculty Projects at Virginia Tech since 2003. Layne received a bachelor's and master's degree in environmental engineering from Vanderbilt University the University of North Carolina-Chapel Hill, respectively. She spent nearly two decades as a consulting engineer on waste treatment and regulatory support projects. In 1998 and 1999 Layne served as an AAAS Science and Technology Policy Congressional Fellow, consulting on waste policy issues in the office of U.S. Senator Bob Graham. A Fellow life member of the Society of Women Engineers, Layne served as national president from 1996 to 1997. She is also an active member of the American Society of Civil Engineers and author of *Women in Engineering: Pioneers and Trailblazers* and *Women in Engineering: Professional Life*, both published by ASCE Press in 2009.

During her 2010 SWE Grassroots History Project interview, Layne discussed why she pursued environmental engineering and her experience at Vanderbilt University; being part of a dual-career couple balancing her education and career goals; her career in environmental consulting; her experience as a Congressional Fellow; the AdvanceVT program at Virginia Tech and the policies implemented to attract and retain female science and engineering faculty at Virginia Tech; and her involvement in SWE and its impact on her career.

- July 2016

TROY ELLER: Okay, today is November 5, 2010. This is an interview with Margaret [Peggy] Layne. She is the director of the AdvanceVT program at Virginia Tech. She is also a past president of the Society of Women Engineers. This interview is being recorded as part of the Grassroots Oral History Project. We are at the SWE conference in Orlando, Florida. The interviewer is Troy Eller. Thank you for joining me.

PEGGY LAYNE: Thank you.

TE: To begin with, can you tell me where you were born and grew up?

PL: I was born and raised in Lynchburg, Virginia.

TE: Okay, okay. And can you tell me what your parents did or—?

PL: My father is a small business owner. My brother is now the third generation running the family business founded by my grandfather in 1922. My mother has been a homemaker. She taught third grade in the fifties, before I was born, and stayed home with the kids. I'm the oldest of four children. [01:00] I have a sister who is a year and a half younger, a brother who is five years younger, and a brother who is thirteen years younger.

TE: Okay, okay. And, could you tell me what your interests were in school growing up? How did you come to be interested in engineering?

PL: Well, I didn't know anything about engineering growing up. There are no engineers in my family. I guess, actually, one of our neighbors was an engineer,

but I wasn't really aware of that at the time. But I was good in school. I liked school, the traditional good at math and science. But what got me interested in engineering in a roundabout way is I went to a summer camp that was run at that time by the Garden Clubs, which is a nature study summer camp, which is really a science summer camp in disguise. Residential two-week program, boys and girls, where we actually took classes and learned about bugs and fish and frogs and trees and flowers and ferns and spiders and snakes and all kinds of fun stuff like that. [02:00] We actually had to do homework and projects and take tests, and I thought that was wonderful. This was in the early seventies, so environmental issues were really hot at the time. The first Earth Day was in '72 or thereabouts. And so I was an early environmentalist.

And when I started to look at colleges, I knew I was going to do something in the science area, so I looked at forestry and environmental science programs, and I found that Vanderbilt University had a program called environmental engineering. And it sounded to me like that would be a good way to go because then I could actually do things to clean up the environment instead of—you know, another alternative might have been to become a lawyer and then argue about how to clean up the environment. [03:00] I thought engineering was much more practical and applied and I could actually make a difference. And so I actually got into engineering through environmental interests.

TE: Okay. What was it like to be a woman engineering student at Vanderbilt at that time?

PL: Well, I graduated from high school in ’76 and I went to Vanderbilt because they had this environmental engineering program and they also offered me a scholarship, which was nice. My parents appreciated that a lot. And I was really pretty—I was very fortunate in being able to go to college pretty much wherever I wanted to go to. My parents didn’t have a whole lot of money, but they made sure that that was not an issue for me. And so I was very fortunate to be able to go to a private university and not have to take out loans or the kinds of things that students have to deal with today. [04:00] And Vanderbilt, at that time—this was in the mid-seventies—was sort of in the steepest part of the curve of the increase of women into engineering programs. And Vanderbilt was very proud that it had a much higher percentage of women than what was normal at that time. What was normal was 10 percent or less, and Vanderbilt had probably 25 percent women. They're a pretty selective school and could pick and choose how they wanted their entering class to look.

And so the administration at Vanderbilt was very proud of the fact that they had a lot of women students, although they certainly didn’t have any women faculty members at the time. So I never had any women professors in any of my engineering or science or even my other classes, as far as I can recall, except for one. There was one woman—it was actually in the business school—who taught some technical communications classes in the engineering college, so she’s the only woman I remember actually having as an instructor in my undergraduate or graduate career, for that matter. [05:00]

TE: Do you think that you would have benefited more by having women engineering professors, or women professors at all? Or do you think it wouldn't have mattered with preparing yourself?

PL: I was very conscious of being a gender minority and was very determined that that was what I wanted to do. So I was a high school athlete. I did a lot of things that were contrary to gender norms at the time, and I was very aware of the fact that there were not a lot of women in engineering, and that was fine. That was—I kind of liked being different and being a pioneer. And so I don't know whether it would have made any difference to have a female professor. I was not put off by having male professors and being one of two or three girls in my classes. [06:00]

TE: Okay. Did you have any mentors or sources of support in getting through the engineering program?

PL: I don't know. Mentors? I certainly had a cohort of peers that were a lot of support. I still keep in touch with one of the women who was in my program. The environmental engineering program was a pretty small program, so there were only maybe a dozen people in my class in that department, a small department. So, that was—my engineering education was actually pretty nontraditional in terms of the schools that produce the largest number of engineers in the US or the land grant institutions with several hundreds of engineering students graduating every year. And Vanderbilt's a small engineering school with probably less than a thousand engineering students in the whole college. [07:00] There were only a couple hundred in my graduating class and in my department, which

was even smaller. You know, it was a very small group. So I had a very supportive, small group of faculty and fellow students that I took a lot of classes with all the way through. So it wasn't like I was at a big school where I was lost in the crowd. So that probably made a big difference.

TE: Okay. What did you—as you were in college—what did you envision your future career would be? How did you think your career trajectory would go?

PL: (laughs) Does anybody who's in college really know what they're going to do when they get out of college? It's a mystery. I really had no clue what engineers did when I—even when I was in college, although they did try to make an effort in some of those Intro to Engineering classes to have people come in and talk about what engineers do, what kind of projects they do, and—. But I wanted to clean up the environment. [08:00] I wanted to work on projects that would treat waste or clean up waste that was already out there, so I had this vague idea that that's what I was going to do, and I didn't really have any particular career path or career goals in mind.

And it was actually a little bit of a challenge when I was graduating because I had this degree in environmental engineering which was pretty uncommon, and employers didn't really know what to do with that. So I interviewed with a couple of big companies that would have put me in sort of a general, entry-level engineering rotation, which wasn't really what I wanted to do. I didn't want to design bridges or highways or oil refineries. I wanted to clean up stuff. So, through the connections of some of my faculty members, I did have several

interviews and a couple of pretty nice job offers, and I ended up going to work for the Bechtel Corporation in San Francisco, in the group that they had within that company to design waste treatment systems for the projects that they were building. So I got to work on some very interesting projects. [09:00] This was in—I got my bachelor's degree in 1980, so the energy crisis was a big thing at the time. The price of oil was going up and there was a lot of interest, as there is now again, thirty years later, in creating oil from coal and recovering oil from oil shale and tar sands in the western U.S. and Canada. So there were projects at that time in the late seventies, early eighties, that I worked on, designing systems to treat the wastes produced by those projects.

TE: Okay. What was your experience as a woman engineer at Bechtel? Was it—

PL: The group I went into at Bechtel, again, was a relatively small group. It was kind of anomalous for that company because I heard stories from people who had worked at Bechtel, who worked on a particular aspect of a particular project and found it not very interesting. [10:00] But the group I was in was kind of like an in-house consulting firm, so we worked on a variety of different projects across the company. And there were two other young women that were hired about the same time that I was. So, again, I had some peers that I could hang out with and we worked together on some projects and our supervisor was very supportive.

We did have some interesting interactions with some of the other people in the office. I remember one of these other young women telling me one time that she was making some photocopies at the copy machine and an older male engineer

came up behind her and said, “You know, you girls should have your own copy machine so that we engineers could not have to wait to make copies.” You know, assuming that she was a secretary. So I don’t know why that’s stuck with me all of these years, but—. [11:00] You know, I really did not have—unlike people not that much older than I am—I never had somebody come up to me and say, "You know, you really shouldn’t be doing this because you’re a woman."

TE: Okay, okay. You went back to school, to the University of North Carolina, to get your master’s. Can you explain why you made that decision?

PL: Well, I got married. I had a boyfriend in college, and when we graduated we couldn’t quite figure out what we were doing so he ended up in Houston and I ended up in San Francisco. And, actually, very shortly after I got to San Francisco Bechtel assigned me to a project and sent me to Houston. So we, within the next year, decided to get married and I moved to Houston with Bechtel. He was in graduate school at the University of Houston. [12:00] When he finished his master’s degree, or as he was finishing his master’s degree, I kind of decided—you want to stop until she’s done?

[Background noise]

PL: Okay. As he was finishing his master’s degree there was actually an oil crash at that time in the oil industry. The price of oil started to go down instead of up, so all of these projects that had been predicated on high energy costs were no longer economically feasible. So Bechtel was actually in the process of laying off

thousands of engineers between 1980, when I went to work for them, and 1982 when I left. And this actually, I think, has influenced my attitude towards employment for the remainder of my career, because early in my career I had this experience where I watched people who had been with the company for twenty years being laid off. And people who had families and kids in college worried about what they were going to do for a job. [13:00] So I think, subconsciously, I internalized that to mean that I was the one who had to be responsible for my career. There was no company that was going to look after me and give me a gold watch in thirty years and everything was going to be fine. So, anyway, that's my excuse for why I've moved around a lot in my career. (laughs)

So things at Bechtel were going down the tubes. If I hadn't left to go back to graduate school I might have been laid off. My husband finished his master's degree in chemical engineering and started looking for a job. In 1982 nobody wanted to hire chemical engineers. Whereas in 1980, when we had gotten our bachelor's degrees, he had half a dozen job offers and decided instead to go to graduate school. So we looked at a couple of locations where he might find a job and I might go to graduate school. [14:00] I was accepted at several different places and we ended up in Chapel Hill, North Carolina, partly because the environmental engineering program there had a professor who was working on treating wastes from synthetic fuels processes, which is what I had been doing at Bechtel. So that's how I sort of got on to Phil Singer at Chapel Hill, and there

looked like there would be some opportunities for my husband to find a job there, which he ultimately did.

So we moved to Chapel Hill and spent a couple of years there. And as I was working on my master's degree, my husband got a job at the Research Triangle Institute. So when I finished my master's degree, rather than pick up and leave and go somewhere else, I got a job with a small company, relatively speaking, in the environmental business that had an office in Raleigh, North Carolina. So I worked for Hazen and Sawyer on municipal water and wastewater treatment plants for a couple of years, and my husband went back to school at North Carolina State to get his PhD in chemical engineering. [15:00] So we traded off employment and graduate school for about eight years, I guess. And I found that I really did not like doing detailed design work—real engineering, one might say. So the kinds of projects that Hazen and Sawyer was doing, actual selecting pumps, pipes, and valves for wastewater treatment plants, was not exactly my cup of tea.

So I started looking around for other kinds of jobs in the area and ended up going to the Research Triangle Institute, where I worked on regulatory support projects for the Environmental Protection Agency. So more policy-level type of projects, more report writing, information collection and analysis, recommendations. [16:00] I worked on some of the early implementing regulations for the Resource Conservation and Recovery Act, the identification of hazardous waste, the hazardous waste toxicity characteristic. We worked on responding to regulatory

comments for proposed regulations and did some really interesting reports on medical waste and lead in soil and odds and ends. So I really enjoyed the work that I did there at RTI. It was a multidisciplinary group of people. I worked with not just engineers—or not just environmental engineers, but engineers with different backgrounds, people with science backgrounds. Had a lot of fun in that job.

And I probably would have stayed there except that my husband finished his PhD and decided he wanted to be a faculty member. [17:00] So he interviewed for jobs and, of course, the number of places where you can get faculty positions in chemical engineering are much more limited than the number of places that you can get consulting jobs in civil and environmental engineering. So I basically followed him in our next move, which ended up being to Tallahassee, Florida, where he joined the faculty at Florida State University. And his—I guess, actually, the department head who hired him gave me contacts at several environmental consulting firms in town. So this was my most ego-boosting job search in my career was when I moved to Tallahassee. And I had acquired my professional engineer's license by that time. I had, what, seven years' work experience, master's degree, PE license, so I was very employable. I was experienced enough that I could go into a job and immediately start making a contribution. I wasn't fresh out of school, but I wasn't so senior that they really had to pay me a whole lot. (laughs) [18:00]

So I interviewed with three different consulting firms in Tallahassee, had three job offers within a couple of weeks, and had to make a decision about which one that I was going to go to work for. And I ended up joining a company that I stayed with—well, so far, the longest that I've been with any one company in my career, although I'm approaching that duration in my current job. So I joined the company which, I guess at that time it had just been bought by ABB, Asea Brown Boveri, which is a multinational mostly manufacturing firm. But the office in Tallahassee was about thirty people. It had originally been E.C. Jordan Company based in Portland, Maine, and they were bought by Combustion Engineering, which is out of Connecticut. ABB bought Combustion Engineering because they wanted to get into the U.S. power generation market, and they probably didn't even realize when they bought the company that they had also acquired an environmental consulting firm in the bargain. [19:00] So the whole company was about, I think, three hundred people at that time. The Tallahassee office was thirty-something, and we were a professional services company that had just been acquired and become part of this multinational manufacturing organization, so—.

Just a couple of months after I joined the office, they got the biggest contract they had ever gotten in the history of the company, which was—I think it was a $70 million contract with the United States Navy Naval Facilities Engineering Command to do hazardous waste cleanup at naval bases in the southeast. So, I was a midlevel project manager in the office. The office manager was younger

than I was. I was really one of the more senior people in the office at that time. [20:00] We got this humongous contract that really consumed the next ten years of the company's life and my career. So I was in at the ground floor of this contract. I managed one of the first task orders that was awarded. I was pretty soon promoted and was involved in hiring, staffing up the office to execute this contract. There were all kinds of complications with it. It was originally intended that there would be subcontractors doing some of the work, and that didn't work out so the company actually had to grow and expand and basically ended up tripling the size of the Tallahassee office in order to execute the work for the Navy on this contract.

So, over the course of—let's see, we moved there in '89. [21:00] We really got started on the contract in 1990 and, for the next seven years, eight years, I was involved in managing particular hazardous waste site investigations, then overseeing other project managers, implementing hazardous waste site investigations, and ended up essentially managing the office and deputy program manager for the contract by the time it started to wind down in the late nineties. And the good part about that was that there was enough overhead being generated on that contract that the company was willing to support me to get involved in SWE.

TE: Excellent.

PL: So my previous employer, when I was in North Carolina with the Research Triangle Institute—it's a not-for-profit contract research organization—they were

not really very supportive of professional society activities, and I was involved with SWE. I started my involvement with SWE when I was in North Carolina, and I can tell that story, too. [22:00] But RTI was not willing to support my SWE activities at more than a local level. So by going to Tallahassee and falling into employment with this company, which ended up getting this big contract which was good for me professionally, it also provided support for my Society of Women Engineers involvement.

TE: Okay. So when you moved to Tallahassee did you feel like you were prepared to take on a management role?

PL: Well, I had actually been a project manager when I was at RTI, so yeah. I was pretty prepared for that. I had not done personnel management, so that was new to me, to be a hiring manager and to be responsible for employee performance reviews, performance management, dealing with problem employees. [23:00] Ended up directly responsible for mostly professional employees, but some administrative support staff and technicians, technical support staff, field technicians. So that was all very interesting. Fortunately, we had a human resource manager. As the office grew, we hired a human resource manager who was very helpful in dealing with those kinds of issues, so—.

TE: Okay. In 1998 you left the company to—you became a congressional fellow? Could you talk about why you decided to move on to that and how that came about?

PL: Well, I had always been interested in public policy issues. The environmental business is driven by public policy decisions. [24:00] And, actually, one of my professors when I was an undergraduate had pointed out to me a program called the White House Fellows, which is a very prestigious program, and suggested that at some point in my career I might be interested in doing something like that. I had done regulatory support work when I was at RTI, so I was familiar with how the regulatory process worked. The work I was doing in Tallahassee—well, all the work I was doing as an environmental engineer—was in response to complying with government regulations. So by ’97 I was president of the Society of Women Engineers, ’96–’97. So ’98 I was stepping down as SWE president and the contract that I had been working on for the last eight years was starting to wind down. So we could see the end in sight. The company had not done a good job of backfilling the workload so we were in the process of shrinking the workforce. [25:00] And so I could stay in Tallahassee and lay off the people that I had hired and hope that there would be enough money that I would still be employed, or I could look around for some other opportunities. And it was a good time to make a change.

So the American Society of Civil Engineers had just started, the previous year, participating in the American Association for the Advancement of Sciences Science and Technology Policy Fellowship Program. So this is a program that AAAS has run—it must be since the mid- to late-seventies because it’s at least thirty, thirty-five years old—where they bring in midcareer professionals,

scientists, and engineers, sponsored both by AAAS itself and by the science and engineering professional societies to spend a year in Washington working in the federal government, either in the legislative branch or the administrative branch to learn about how the government works, how science policy decisions are made, how science and technology impacts other kinds of policy decisions that are made. [26:00] So it's a two-way street both to provide science and engineering expertise to policymakers in Washington and to educate scientists and engineers about the public policy process.

So I applied to this program through the American Society of Civil Engineers, was interviewed and accepted into the program, and given the opportunity to spend a year in Washington as a Congressional Fellow working in a congressional office. And the way the program works is you go to Washington without a job, essentially, and the AAAS runs a two-week orientation program about science policy, which is pretty much equivalent to a graduate-level class in science policy. And I can say that because I've had a graduate-level class in science policy, and it was pretty much the same stuff I learned in the AAAS orientation program. [27:00] And then you're turned loose on Capitol Hill to peddle your resume to congressional offices. So you can work for an individual member of Congress, either a senator or a member of the House of Representatives, or you can work for a congressional committee, which focuses on a more specific group of issues.

So I ended up, actually, working for Senator Bob Graham, who was from Florida. So that was a good fit for me, being from Tallahassee at the time. Graham had been a two-term governor of Florida and he was in his, I think, second term in the Senate at that point and he served on—what attracted me to Senator Graham's office was he served on the Environment and Public Works Committee, which handled water, wastewater, and hazardous waste issues. So I was hired into Senator Graham's office to basically staff those issues for him for the year that I was there, and the fellowships provide essentially free help to the members of Congress because they are not—the salaries are not paid by the members' offices. [28:00] They are paid by the sponsoring societies. So being in the Senate in the office of a senator from a very populous, a large state meant that that office had a very large staff and the senator was able to parse out different issues to different people. So I was able to work on the issues that I was most interested in together with his permanent staff and several other fellows who were working in the office. So, that fit my needs and was very interesting, and that's how I ended up there. Can we take a break a minute and get a drink of water?

TE: Absolutely.

[BREAK IN RECORDING]

TE: OK.

PL: So I was talking about the Advance program at Virginia Tech?

TE: Um-hmm.

PL: So we established a series of workshops, seminars, brown-bag lunch seminars for graduate students at Virginia Tech on how to prepare for a faculty career. [29:00] So, typically, graduate students who are working on a PhD in science or engineering—what you're focusing on is your research. They don't really tell you the other things that faculty members do besides research and teaching. Of course, they kind of know they're going to be teaching and they often have the opportunity to teach. If they don't teach a whole class, to give guest lectures and that kind of stuff. So they know that faculty work involves research and teaching.

But it also involves a lot of service activities, and how do you get started in your research? How do you learn to be a better teacher? How does the interview process work? It is very different in academe than in industry. And, certainly, if they had been going to school without taking a break they would never have gone through an interview process, so it is very involved for an academic position. [30:00] How do you write a teaching statement, a research statement? What to expect when you go on a campus interview visit? How to negotiate—the fact that you can negotiate when you get a job offer. What are the things that you should ask for? And you need a startup package if you're going to be doing research. The university gives faculty, entry-level faculty money to buy equipment, to start up a laboratory, to hire graduate assistants, a technician. So what do you need to be thinking about for that? So these kinds of things that you typically don't learn in a graduate program.

So we have a series of workshops that we give to graduate students on those topics. We also held a national, two-day workshop where we solicit applications nationwide and brought in sixty—mostly women, a few minority men—to go through a series of two-day workshops on those kinds of issues, particular concerns for women and minority faculty members who are often called on to serve on committees because they want women and minority representation. [31:00] And because there are not very many women and minorities, those few that there are get called on to do extra service duties, so they have to be aware of that and be able to prioritize their time and learn how to say no so that they can actually focus on the things that are going to get them promotion and tenure, like doing their research. So we did those kinds of preparation things. We awarded research seed grants to junior faculty members.

We started out because the program—the grant proposal was actually written by two engineering faculty members, and then they brought on two women from the College of Science to be part of the leadership team. But many of the programs started out focusing just on faculty in the College of Science and the College of Engineering. And that actually created some backlash in the first couple years of the program because there were a lot of women scientists and engineers in other colleges at Virginia Tech. [32:00] Virginia Tech has a College of Natural Resources, a College of Agriculture, College of Veterinary Medicine. They're all women who consider themselves scientists who work in those colleges. There is also a College of Architecture and Urban Studies that has some engineers in it,

as well, so we got some backlash the first couple years. And so we ended up actually broadening many of the programs university-wide, to—well, we couldn't really use National Science Foundation money for the humanities. NSF does fund social sciences, so we ended up expanding most of our programs to women faculty across the university, as long as they fit into disciplines that the National Science Foundation supports. So the program kind of expanded that way. [33:00]

The proposal had proposed to offer sort of internal fellowships to women to do self-designed leadership development programs, to spend a year working in a dean's office or the provost office in central administration, to learn how those kinds of leadership positions work in a university. And we got very few applications to that program. So that was a program that we had to step back and rethink, So why are women not interested in this program? What else can we do to make them interested? What other things can we do to prepare women for leadership roles? And we ended up developing, with a faculty member in psychology, a one-on-one leadership coaching program. So we had three cohorts of five or six women who went through a very intensive process that included a self evaluation, peer evaluation, developing an action plan, and meeting with the psychology professor as, essentially, a career coach, over the course of a year to develop some skills that they needed to advance in their careers. [34:00] And several of those women have actually moved on to become department heads at Virginia Tech, so we were very pleased with the outcomes of that program. We also have a series of lunch seminars for women faculty

where we brought in leaders from Virginia Tech, and occasionally some outside speakers, to talk about their career paths and their leadership roles. And so we've brought in the few high-level women that there are at the university, the women department heads, associate deans, as well as some of the male leaders, to talk about what were the influences on their careers and what were the challenges that they faced and how they overcome and that kind of stuff. So those were really fun.

And we did a lot of work with university work/life balance policies, dealing with stopping the tenure clock for birth or adoption of a child. [35:00] We implemented what's known as a modified duties policy. Faculty members have job descriptions that include both teaching and research, and the teaching levels vary by department across the university. But when a faculty member has a child, it's typically easier for them to—in order to maintain their status as a full-time employee because there is no paid maternity leave, and most of them can't afford to actually go part-time in terms of salary and benefits. But, in order for them to maintain their status as a full-time employee, actually be considered to be working full-time, it's easier if you can relieve them from teaching for a semester so they can be working on research, where they have flexibility of time and how they spend their time, rather than having to be in a classroom at a certain time or a certain place. [36:00]

So we implemented a modified duties policy so that when faculty members have children or experience other kinds of life events—whether it's a personal illness

or a family member's illness or an accident, or things that happen in life—the central administration can actually provide the department with money to hire an instructor to teach the class for that faculty member. So it's not a burden on the faculty member's colleagues or that particular department to cover their teaching load while they are still maintained as a full-time employee, getting full-time pay, but having flexibility of how they spend their time. So modified duties was a big issue. We also, actually, put on the books a part-time work policy but, because of state law in Virginia, we can't offer benefits to people who are less than full time. So a faculty member could go part-time for part-time pay if they were able to cover their health insurance, for example, through a spouse or a partner. [37:00] Well, not a partner in Virginia because Virginia doesn't allow that, but anyway.

So we put in these policies to help accommodate faculty members with personal circumstances, most often the birth or adoption of a child, but also for other kinds of situations. And then we spent a lot of time educating the department heads, deans, and the faculty members themselves about the policies and how the policies are supposed to work, because you can have policies on the books but if people don't use them, or if people feel like they're going to be penalized for using them, they're not accomplishing their goal. So one of the things we are continuing to do is to track people who are using the policies and how their careers are progressing and continuing to educate the administrators and the departments and the colleges so that people are comfortable taking advantage of the work/life policies. [38:00] And that's something that we get feedback that

people are very pleased with and has been a very good recruiting tool for departments who are hiring new, young faculty. And both male and female faculty have taken advantage of those policies. So that's one area that we feel like we've made a difference at Virginia Tech.

We also spent an incredible amount of time trying to expand the availability of childcare in the community. We have a small child development center on campus that's run by the human development department that's actually for research purposes. It's available for faculty children and children in the community, but it has very limited space. So we spent a lot of time trying to figure out how to expand the availability of childcare because it's very limited, especially for infants, in the Blacksburg community. [39:00] And we went out to some of the commercial companies that operate childcare centers on campuses nationwide, were unable to interest them in coming to Blacksburg. They felt the market would not really support their operation. So we ended up developing an RFP, for which I think there was only one respondent, who was a local childcare provider who was very highly regarded in the community and had a waiting list years long, who actually operates as a not-for-profit, but was not able to—didn't have the capital to expand her operation. And we worked with the foundation, the private money available to the university—because we're not allowed to use state money for childcare—and got the foundation to commit funds to enter into a contract with this childcare provider that guarantees a certain amount of money from the university, private money. [40:00] I think it was a five-year contract that enabled

her to basically double the size of her childcare center to take in another 240 children with 60 or 80 percent of the slots given priority for Virginia Tech employees. So that center is only in its second year of operation now. So we have heard that that's been very important to a lot of people and has also been a good recruiting tool to young faculty who are moving to the area with small children and, of course, have not—because they're new to the area—are not on waiting lists. And so we can bump them up to the front of the waiting list to get into a high quality childcare facility.

So those are some of the things that we've done over the last seven years as part of the Advance program. [41:00] And now that the grant funding has ended as of this past August, the central administration is continuing to support, of course, the work/life policies that are in place, their policies that are built into the structure of the institution. And we're continuing to do some of our seminars for graduate students and for faculty. We still have funding to bring in distinguished women speakers. We were able to bring in Mildred Dresselhaus and some other high-level women scientists and engineers through the program. And we, as part of the program, have an annual workshop on advancing diversity at Virginia Tech. That started out as advancing women at Virginia Tech, and after a couple of years we decided to partner with the diversity office on campus, and so we've—for the last three or four years—had the program on advancing diversity at Virginia Tech. So we bring in, usually, a high-level outside speaker and then we have concurrent sessions dealing with different issues for different

constituencies on campus, whether it's mentoring for junior faculty. [42:00] We've recently gotten feedback that the senior faculty feel like the junior faculty get all the attention. We've had all these programs in place to help junior faculty get started and get promoted and get tenured and then, once you get promoted to associate professor with tenure, people think that you've figured it all out, and nobody tells you how to get promoted to full professor. So the last couple of years we've had a couple of sessions on the next promotion for faculty members and what you need to do to get promoted to professor.

TE: At Virginia Tech at least, what do you think is the future for women faculty in the engineering and sciences? Do you feel like this program will be able to bring in a lot more women faculty members or that it will make them more likely to stay? That they won't have to leave for personal reasons?

PL: There's so much going on in higher education right now. Of course, the economic situation is that we've had no raises for three years. We had quite a lot of hiring in the middle years of the program. [43:00] We've had very little hiring the last couple of years. Actually, the first two years of the program we had a dean in engineering who was very proactive in hiring women. We actually almost doubled the number of women faculty in the College of Engineering during that two-year timeframe. And since that time, the dean is still supportive but not quite as proactive as the previous dean. And so we've maintained the numbers, but we've actually—this is one of the conundrums of the Advance program—we've lost several senior women faculty in the College of Engineering who have left Virginia

Tech to become department heads at other institutions. So, while that's in some ways a success for the Advance program, it's not a success for Virginia Tech because we have not been able to promote those women within the institution. And some of that is a timing issue, when the positions become available. [44:00]

But still we feel like, and the experience at MIT has shown, that you can't rest on your laurels. If you're not paying attention you will backslide, or at least stop making progress. So it's hard to make a lot of progress right now when we're not hiring and we have very little to reward people. Unfortunately, times are tough everywhere. So we have lost some people because other institutions are able to offer them better packages than we are, and we're not able to counter those offers very well because of limited finances. That's an ongoing challenge. So I have to say, in terms of the future, the problems are not all solved. The problems are still there. We need to keep up the pressure. We need to keep up the attention on both making sure that we have women in the candidate pool, making sure that the work/life policies are implemented appropriately and there's not backlash, and continuing to track progress. [45:00] It's both numerically, in terms of counting numbers of women, and perceptions and experience-wise.

We've done two faculty surveys about job satisfaction and looked at perceptions of how men and women are treated differently, trying to see if we can move the dial on that, and those are long-term propositions. So, right now, we have a very supportive provost, senior vice president, who is continuing to both put money behind the programs and to talk about the programs and to keep me on as a staff

person to run the programs. So there's a high level of commitment there, but he and the president have been in the office for ten years. Certainly in the next five years there's going to be a change in upper administration, so it will be interesting to see what happens then. [46:00]

TE: Okay. I'd like to switch over to talk about your experiences in SWE. You talked earlier about how you started to get involved in SWE, particularly when you were in Tallahassee. When you first started getting involved in SWE did you imagine that you would move into leadership positions within the Society?

PL: Well, I first joined the Society of Women Engineers as a student at Vanderbilt. I think they were just organizing the student section there. That was the time, in the late seventies, when lots and lots of student sections were being organized. And so I joined really just sort of as a show of solidarity. I was involved in other student organizations when I was an undergraduate. I saw that there was the Society of Women Engineers. I said, "Oh, I need to be a member of that." But I don't remember going to any meetings or participating in anything in any significant way at all. [47:00] It just—you know, pay my dues, be a member, move on.

And then I moved to San Francisco. I did maintain my membership, upgraded my membership when I graduated to become a regular member. And when I moved to San Francisco I went to at least one or two meetings. That was a very big, very active section. I'm not a very outgoing person, so I could go to a meeting and sort of sit in the back of the room and not say anything and go home. And

kind of the same thing when I went to Houston. I did, I think, get a little bit more involved in Houston, the Houston section, when I was there. I remember going to a couple of events there. But still, that was a big section and they had a lot of people doing stuff so I could kind of stay in the background.

When I went to North Carolina, I transferred my membership and I got a notice from the local section that they were going to have a meeting. [48:00] This was all, of course, pre-email, so I got a notice in the mail and RSVP to this phone number if you want to come to the meeting. So I called them up and said, "Hey, I'm new in town, I'm going to be coming to this meeting," and they were like, "Oh great, we're so glad to have you." And I thought, Oh, this is nice. People are very friendly here. So I went to the meeting and there were six other people there. (laughs) And I couldn't hide in the background anymore. And so I met people and they immediately put me to work. And by the next year I think I was section treasurer or secretary or some kind of officer, and a year after that they asked me to be section president. And I didn't think I was quite ready to be section president but they were very persuasive because they were all tired of being section president. (laughs)

And at the same time, probably even more important, a woman who came into the same graduate program that I was in at Chapel Hill one year behind me had been very active as a SWE student member at University of California–Berkeley and in, I think, the Sacramento section where she had worked as a couple of years as a process engineer. So she was already on the national—what was

then the student activities committee as a student regional coordinator. [49:00] And she was, I think, actually moving on to be chair of the committee and coerced me into replacing her as student regional coordinator.

And she was all excited about going to the national conference which was in Washington, DC, and dragged me along with her in 1984, when I was an incoming—I think I must have been incoming section president for the North Carolina section—and introduced me to SWE national conferences, which was—it was quite an exciting conference. It was an ICWES [International Conference of Women Engineers and Scientists]. There was an international component at the conference, so there were people from all different countries there, and they got all dressed up for the banquet. And it was also the conference when they were discussing regionalization. [50:00] So, there was the epic Council of Section Representatives meeting that went on into the wee hours of the night and reconvened after the awards banquet and I was like, "Oh my God, what am I getting myself into in this organization? These people don't know what they're doing." (laughs) But we got over that. And it was also, of course—we were talking about this earlier with the ICWES people earlier today at this conference—trying to remember how many people were at that meeting. And my recollection is it can't have been more than five hundred. You know, it was a very, very different experience from what it is today with five thousand participants at the conference, but—.

So that was my introduction to SWE. My graduate school friend took me around and introduced me to all these movers and shakers that she knew from her time in California. [51:00] And I was a local section president and got sucked into being on a national committee. Which, unbeknownst to me, at that time SWE had a very small professional staff and the volunteers—it was very much a volunteer-driven organization and volunteers did everything. And, with regards to the student activities committee, unbeknownst to me, that was probably one of the biggest workloads in the entire organization at the time,because we were responsible for keeping track of all the student sections, harassing them to pay their dues and send them in to headquarters, organizing their region conferences. And we did all this before email. It was amazing. Telephone calls, postage stamps, all that stuff.

So running the North Carolina section was kind of a sidelight because it was a very small section. We did meetings. We did a lot of stuff, did outreach programs. [052:00] I was section president and I was section representative the next year and stayed involved with the section, but I mostly got involved in committee work with the student activities committee. So I spent two years as student regional coordinator for the southeast region and then two years as chair of the student activities committee. And going to national conferences, kind of helping to organize the student programs at the national conferences. And one of the most interesting ones was when we went to Puerto Rico in ’88, and trying to coordinate the student programs with the student programs chair, who was

Mabel Estevez, by telephone to Puerto Rico. Never knowing whether the people on the other end of the line were going to be speaking English—which, of course, they all did, but it was always a little exciting to make phone calls to Puerto Rico. [53:00] And got to Puerto Rico and trying to navigate through this conference which was operating on island time, and there was a very different perception of how sessions ought to be organized. (laughs) The level of organization was, let's say, quite different than it is today.

So I chaired student activities committee for a couple of years. I think I was actually invited to run for the board at that time. Met one of my SWE mentors, Jill Tietjen, in Puerto Rico, who was—must have been vice president for student affairs or whatever we were calling them at that time. So she was my board contact as student activities committee chair. I can remember her walking into the session that I was getting ready to run, talking about student activities, and walking up and introducing herself. But my employer at that time was not willing to support me at the national level, so I was able to somehow make it to region conferences and national conferences but they weren't willing to support me to serve on the board of directors. [54:00] So after I chaired the student activities committee for two years, I then chaired the scholarship committee, coordinating, recruiting sections to judge the scholarships, and shipping boxes of scholarship applications across the country, and compiling all the letters to the scholarship award recipients and all that kind of stuff.

And then I moved to Tallahassee and was able to get support from my employer there to run for the board of directors as regional director at that time. So I did a two-year term as region director for the southeast, and I was—let's see. At that time they had a Florida section, I think, and we were involved in chartering a section in the Jacksonville area, northeast Florida or whatever it's called. [55:00] So I was involved in the Florida activities to some degree and occasionally going to meetings and organizing meetings over in Jacksonville, which was about a three-hour drive from Tallahassee. Tallahassee's in the middle of nowhere. I was also student section counselor for the student section at the engineering school in Tallahassee, which is joint between Florida A&M and Florida State. So I was a little involved with the students there, too.

So I did two years on the board as region director and then ran for secretary. And so I was secretary when we were just really making the transition at that time in the early nineties to electronic communications. [56:00] And I can remember Gloria Montano explaining that there was this thing called the World Wide Web that was going to change our lives. And we were like, Yeah, yeah, yeah, Gloria. Whatever you say. (laughs) But we were getting on email. I was on CompuServe by that time with, you know, DOS command line interface kind of stuff. And when I was secretary we were trying to encourage people to submit their board reports electronically instead of mailing them to me, and then I would have to retype them, obviously, to get them into the minutes. So we were still kind of in a transition period where some reports I would get electronically, which was a

wonderful thing—on my Atari 1040ST computer—and some would come in on paper, and I'd have to retype them all to do the minutes. But we were just starting to schlep around what were not really laptop computers at that time, but portable computers to actually take notes live during the meeting on a computer instead of by hand. [57:00] So that was some interesting times.

And then, at the—let's see, '89, '90, '91, it must have been? The last time we had the conference in Orlando was '92, '93? No, it wasn't '93. It must have been '92. So the last time we had the conference in Orlando was when Jill Tietjen told me that I should run for president-elect. And so, of course, I did. The nominating committee put two names on the ballot, so I ran against Jaclyn Spear for president-elect and Jaclyn won. [58:00] And I was actually at the WEPAN [Women in Engineering Programs and Advocates Network] conference with Anna Salguero and Kathy Cunningham. Anna was president, I was secretary, Kathy was president elect—when they were counting the ballots. And Anna got the phone call from headquarters that Jaclyn had won the election. And I have to confess that we were—the three of us were all kind of stunned that Jaclyn had won the election.

And Kathy had already made all her committee chair assignments by that time. The only committee that she didn't have a chair for was the statistics committee, so she said, "Well, would you be willing to chair the statistics committee?" Which turned out to be a wonderful opportunity for me because in '93 the Society was just publishing the National Survey of Women and Men Engineers, that had been

conducted with the cooperation of the American Association of Engineering Societies in ’92. And the convention that year was in Chicago in ’93, when we released that report. [59:00] And I basically spent the next year, as chair of the statistics committee, putting together a presentation about the findings of that survey and going on the road around the country giving presentations to different SWE groups—different sections, region conferences, to the board of directors, and even to some groups here in Washington, the Commission on Professionals in Science and Technology—on the findings of this survey. It was really a unique data set at that time, showing the perceptions and the work experiences of male and female engineers. So I developed my public speaking skills. I learned a lot about the engineering workforce through the interaction with some of the people who were involved with the survey.

And the next year I ran for the board again as a vice president and came on the board as vice president for member services, I think. So I was responsible for membership recruitment campaign. [01:00:00] And met Gail Mattson at the Boston convention. She was membership committee chair, reporting to me, and she came up and gave me a SWE ball cap—which I still have in my closet to contribute to the SWE yard sale the past presidents were discussing last night—that says, "You, Me, and SWE," which was our slogan for our membership campaign that year.

So we had actually a rather traumatic year with a lot of budget difficulties and ended up having to cut headquarters staff that year, and it was quite a difficult

year for the Society. And I was nominated for president-elect at the end of that year, and there was a petition candidate who ran against me, but I won the election and followed Ruthann Omer as president. [01:01:00] So we spent really a year sort of coming to grips with the financial difficulties that we were having and making adjustments and then sort of in a rebuilding period there in the mid-nineties, getting our house in order. And still operating with a very small staff in New York. Anna had moved us out of the national United Engineering Center in ’93, when the big societies decided they needed the space and kicked all the small societies out. So we moved down to Wall Street, which was actually—it was a lot of fun having headquarters in New York and being able to go to New York about once a year and spend the weekend, go to a show, go a nice restaurant, even if we were having to cut the budget. And then we maintained our staff in New York through the time that I was—the rest of the time that I was on the board and as president. [01:02:00]

But then the year after I was president our executive director resigned and I was asked to chair the executive director search committee. So no rest for the wicked. As past president, I chaired the executive director search committee, which was going on as I was in the process of moving to Washington to start the congressional fellowship. And we ended up—how did that go? It seems like we hired an interim for a while, and then we hired somebody that was our first choice, and then she didn’t work out. And we ended up bringing the interim back as our permanent executive director for a couple of years. [01:03:00] So I ended

up kind of running two executive director searches in the next two years after I was president and got involved with—one of the traditional jobs of past presidents is chairing the achievement award selection committee. So I did that for a couple of years.

And then I got onto the editorial board for the SWE Magazine. So I had started writing articles for the magazine—well, as president, I contributed columns to the magazine, and as president I was instrumental in bringing Anne Perusek as an actual employee of SWE as opposed to an independent contractor—given that I had learned through my work experience that she didn't really meet the definition of an independent contractor, and if the Labor Department ever sort of investigated that, that would not look good for us. So we would be much better off hiring her as a direct employee and giving her some benefits rather than continuing to call her an independent contractor, which, in fact, she really wasn't. [01:04:00]

But I contributed some other articles to the SWE magazine when I went to the ICWES in Budapest. And some of the other activities, actually, that I was involved with in Washington I started to write about. And so they invited me to join the editorial board, which I have to say was probably the most fun of all the jobs that I have done in SWE because you don't really have to do a whole lot when you're on the editorial board. You can if you want to, but it's an advisory board. And I really enjoyed working with Anne and with the other people that were on the board at the time. And I ended up chairing the editorial board for a

couple of years. And continue to contribute articles and, in fact, have become a regular annual contributor of profiles of female deans of engineering, which I'll be talking about a 4 o'clock this afternoon if anybody shows up. Or even if nobody shows up to my session. [01:05:00] So I got started in 2002 when we were planning our fall back-to-school issue. We thought it would be a nice idea if we wrote about a female dean of engineering because there weren't very many, but there were a couple. And so I profiled them. And then the next year came around and I thought, Well, there are some more deans out there. I'll go profile them, too. So now I've been profiling women deans for the last eight years, nine years. And I'm actually now in the process of trying to do some more with that, with those interviews and trying to write some other articles based on that.

TE: Why has it been important to you to participate so much in SWE? To devote so much time to SWE?

PL: Well, early in my career when I was sort of developing my organizational skills, I was sort of doing that on the job and in SWE, so learning how to delegate, how to get people to do stuff, and doing public speaking. [01:06:00] Those kinds of things that entry-level engineers get called on to do and skills that are necessary if you're going to advance in your career. Being able to work with people. Being able to communicate in writing and verbally. So that kind of skill development was important. Also, early on, I moved around a lot to different locations and having SWE as a place to go to meet people when I was in a new location and find out what's going on in that community was a good thing. And then, of course,

as I got more involved I developed friends, and so that's really why I come to SWE now. It's not so much to go to the sessions or learn new skills, but to reconnect with people that I've met over the last 25 years. See how they're doing and what directions their careers are going, which is always fascinating to hear and ever-changing. [01:07:00] We're still writing that story.

TE: Okay. What do you think the future is for SWE?

PL: Oh, I'm not sure I know what the present is for SWE. I feel like I'm over the hill already. But clearly SWE has just grown so much in the last five years. It's quite amazing, and we're looking at the international arena now. We have strong relationships with corporations, which, of course, we have had all along but I think those have really grown and deepened in the last ten years. And certainly, when I was president, throughout the nineties we had a lot of focus on corporate relations ,and we went through a time where every time we had a board meeting in a different city we would meet with local corporate leaders, invite them to come learn about the Society of Women Engineers and develop those relationships. We did those in conjunction with the local sections, so the local section leaders would participate in those presentations. We'd talk about both the national and the local activities.

We've got a strong network of collegiate sections now and the participation of the collegiates in leadership roles is expanding, and that's a great thing. It's an ongoing challenge to communicate to college students, engineering students, that SWE is not just a student organization. There is still a perception in many

universities that SWE is a student club. And, of course, the people that are here at the national conference know that it's a national organization with professional activities as well as student activities. But students are new every year and so we need to keep sending that message, that SWE is not just for when you're in school. It's for when you're out in the workplace because we certainly have not solved all the challenges for women in engineering. The numbers have leveled off. It's looking—I give those presentations, I make those graphs every year, and the numbers of women going into engineering is going down the last five years. It's very frustrating that in spite of all of the activities of SWE and many of the other organizations that are working for change that the participation of women is not increasing. It has really plateaued.

So I think SWE has a lot of work to do and working—not just SWE, but working with the other engineering societies, many of which also have active women's groups within the disciplinary societies. But I think there's still a special role for SWE as the only organization whose reason for existence is to support women in engineering.

TE: Is there anything else you would like to add before we end our interview?

PL: I've talked more than I've talked in the last week. (laughs) Covered career and SWE and—well, I have to say I said I was divorced, and I've remarried, so I want to put that on the record. (laughs) That I was able to find somebody else who could put up with me, and I could put up with him, so we're getting ready to celebrate our fourth anniversary this year. And I never had kids but I'm able to

enjoy his two adult children and 5-year-old grandson. So I'm now a grandma and I can highly recommend skipping the children and going straight to the grandchildren. Don't know how feasible that is as a recommendation for very many people, but it's working for me, so. I guess that's enough.

TE: Okay. Well, I thank you very much.

PL: Well, thank you.

TE: And this is the end of the interview.

[END OF RECORDING]