

LASEWICZ: This is an oral history interview with Carol, IBM Executive Assistant to John Kelly, on August 4, 2003, conducted by IBM Corporate Archivist, Paul Lasewicz. Thank you and welcome.

CAROL: Thank you.

LASEWICZ: Can you start off by telling us what your field of study and why you chose this field to work in?

CAROL: Sure. For my undergrad, I studied electrical engineering and then I pursued computer engineering in graduate school. And the reason I chose electrical engineering is since I was a kid, my dad worked in electronic field engineering.

He would bring home electronic instruments and he would work on little circuits and artifacts and I always enjoyed watching him build and create these artifacts and seeing how they worked. My dad was always very good explaining what he was doing and that got my interest.

Then later when I was pursuing electrical engineering, the PCs became popular. So, my dad got me a PC and I enjoyed using it and programming it. It was very good to see all the things you could do just by programming the computer. I

became interested in how computers work and how you could design a computer.

LASEWICZ: How old were you when you first started getting interested in this and you saw your dad tinkering?

CAROL: For the engineering part, I would say around middle school. That was when I really started enjoying just working on problems and looking for solutions and creating little things or seeing how things work.

LASEWICZ: And the PCs came later?

CAROL: Yes, the PCs came later when I was in undergraduate school.

LASEWICZ: You mentioned your father. I assume that he was pretty encouraging about your interest in the field?

CAROL: He always encouraged me to do what I wanted to do and to work on problems, and he often showed me how he could find creative solutions to problems, providing many explanations about what he was doing. So, that helped a lot. He was really a source of inspiration.

But also my teachers in high school, I took biology lab, chemistry labs and physics labs. And doing all those lab

works you were encouraged to try different things. You would apply the concepts that they taught you in the classroom and then you would change variables and see how that affected the result.

So, the whole process of trying different things and seeing what was the impact and the kind of different results that you could get, that was really exciting for me.

LASEWICZ: In the classes that you were taking at this time, were there a lot of women in these classes? Female students?

CAROL: In high school?

LASEWICZ: Yes.

CAROL: Well, in high school it was usually half and half. I studied high school in Venezuela, and over there you can either choose a science curriculum or a social studies curriculum. I went for the science curriculum and it was pretty much half women, half men at that point.

The subjects you would take were not optional. Each curriculum had a required fixed set of classes. For example, in the science curriculum everybody had to take chemistry,

physics, math and biology. Those were core courses. Most of the classes were combined with a lab.

LASEWICZ: Was that 50/50 divide still there when you got to your undergrad work?

CAROL: No. The ratio decreased. There were probably 10 women out of a class of 50 people. And that continued until I graduated.

LASEWICZ: Do you have any sense of why that was? Was it just that the curriculum? Were you not receiving the same support at the college level that they did in high school to partake in the science and technology classes?

CAROL: I think it was just a matter of different interests. Many women didn't choose to pursue an engineering degree because they probably were more interested in law or biology or something else. I know many of my classmates in high school did that. But I don't know of any other particular reason for [there] not [being more females] because I think everybody received the same encouragement, at least in school, since everybody took the same classes.

It's different when you have the choice to take one class or another. And again, I studied high school in a different country so it may be a little different from here.

LASEWICZ: As you came out of high school and went into the undergrad course work and you have this change in the demographic makeup of your classes. Was that an issue for you? Did that bother you at all? Or was it expected and didn't cause any challenges for you?

CAROL: It didn't bother me the fact that it was just a few women. You always have to strive and work hard to get your things done and do it successfully.

LASEWICZ: In 1998, you came to IBM. Was that your first working job in the field?

CAROL: No, before going to graduate school I worked for about a year in a research center in Venezuela where I also had the opportunity to do a co-op assignment.

It was a nine-month assignment working on a senior project within the company. And after that, I got hired by that company and worked there for a year as a software engineer creating a user interface for an application.

LASEWICZ: What was that like? Were there any surprises as you went from college into the work environment?

CAROL: Well, the co-op experience provided a good transition into real life because it gave me the opportunity to work on a prototype for a product and apply all the knowledge that I got in undergraduate school. The transition was smooth because of that experience. It was more like a continuation.

LASEWICZ: And after that position, you decided to go back to...?

CAROL: To graduate school to pursue computer engineering. And that was a big difference. It was a big change first of all because I came to the US. So it was a different culture, different language. And that itself had its challenges.

And then the specialty was different. Instead of electrical engineering I chose computer engineering and focused on the computer architecture area. But it was pretty interesting. I was very excited about doing this. And it turned out to be even more interesting than I ever thought it would be.

LASEWICZ: How so?

CAROL: It opened a world of new opportunities, new things that you could do. At the beginning in high school when I thought about studying engineering, you say, okay, you like to create things and do this and do that.

But you really are not aware of all the opportunities that you may have working on the engineering field. Once you are in that field you learn about the different technologies, the different fields of specialty within engineering, and how engineering has an impact on so many aspects of your life. So that was different.

LASEWICZ: Were there any teachers in grad school or other mentor type individuals that assisted you through the difficult challenges that you were dealing with and also just helping you see the excitement of the field?

CAROL: I had an advisor in graduate school when I was working on my thesis. He was very encouraging, he was very supportive during the tough times. And he always believed in me and really helped me get through the hard times and succeed.

LASEWICZ: And so after grad school, you came to IBM. Can you talk a little bit about your work history here? Why did you come to IBM? What kind of positions have you had since you [arrived]...it's five years now, I believe?

CAROL: Five and a half. I joined the eServer architecture group right after I graduated from CMU. I worked in that group until a few months ago when I got my latest assignment as an executive assistant.

And what I liked the most about that job is that it allowed me to be creative. To be able to see the whole system, not just a little piece of it.

I worked defining the hardware software interface for the high-end servers. So you have to know about hardware details, but you don't have to dictate the hardware implementation.

And the software layer gets to use what we produce since the architecture defines the set of computer instructions used by all the programs and applications. So, you really have to know about software, the operating system, the whole thing.

And the other part that I really enjoyed is that it allowed me to drive a team, a cross functional team where we had micro code designers, operating system designers and other architects working together to come up with the specifications of a new feature in the machine that would allow the machine to be more competitive.

LASEWICZ: As you look back on the training that you had, the undergrad and grad level, can you talk a little bit about how that training prepares you for working in the environment you just described?

CAROL: It gives you the general problem-solving skills. It also trains you to think in a logical way. It helps you in the way you approach problems. It also helps you to analyze data, gather information and then draw conclusions or use information to solve a problem or to get what you want.

And it also provided the computer background that I needed to succeed in my job.

LASEWICZ: You mentioned some of the challenges that you've had to face, particularly the cultural one of the shift to the United States from Venezuela. Can you talk about what you think were the biggest challenges you faced and how you overcame them?

CAROL: I'll talk about my previous job. One of the challenges is always to bring people together to come up with specifications that meet all their different needs.

When you're trying to design a product, you have to meet everybody's specifications, but you have to make tradeoffs

because sometimes you cannot give everybody what they want. And it's a challenge just to bring them together and to make them happy with the tradeoffs you make.

LASEWICZ: That sounds like something that they don't really teach you in school, how to be prepared to do that or do that.

CAROL: They teach you in school to work in teams. Because you rarely work isolated, you usually are working on projects that require collaboration from different people. And everybody has their own ideas and ways of doing things. So you have to learn to work with them.

And even though it's not exactly the same environment, I think it gives you the basis you need. So when you come to work, you can apply what you have learned in school from working with other teams and build on that.

LASEWICZ: Sounds like good advice for somebody starting out. You're fairly early in your career, but I'm sure you face work/life balance issues. What are some of the issues that had to face and how you've dealt with them?

CAROL: This is very challenging and this is no new news, to balance life and work and family, especially when

you have children. And I have two little sons. But what makes it easier is to have the support around you.

My husband is very supportive. We share all the responsibilities with the kids. So, that's good. And I also have my sister and my brother-in-law who help out when things get crazy.

And other than that, having the flexibility to work at home. Having a high-speed Internet connection is very key. It allows you to get your work done at any time. And without the pressure of having to be at work at a particular time.

I've used all the flextime options that IBM provides, like working from home when school closes. And I've also used the Lifeworks [referrals] to find quality day care for my kids. So that's been very helpful.

LASEWICZ: You [are] early on in your career here, is it measuring up to the way you thought it would be? Is it just like you expected to be, working as an engineer? Or is it different than what you expected it to be? And if it is different, then how?

CAROL: I think it is different, it's even more exciting than I thought it would be. It's also very fast paced. When you work in a technology company you really have to keep up with the rest of the world and what's going

on or else you will get behind and won't get a successful product out the door soon enough. So, that's something that you're probably not aware of when you go to school.

LASEWICZ: It sounds like a challenge. How do you keep up? Is it a question of building your own networks for information or are there ways that you can keep up just as part of your job?

CAROL: I think you really have to use your networks to keep informed of what's going on in all parts of the business and also outside. And you also have to read a lot to keep up to date.

LASEWICZ: A lot of times you think you get out of school and you're all done with reading. But it sounds like it's a part of....

CAROL: It's a part of life, part of your work.

LASEWICZ: Okay. Do you have anything else that you'd like to say? Words of wisdom or advice that haven't quite come out to young ladies that want to get into the field.

CAROL: I think probably some ladies are afraid of going into engineering because they don't feel they either will like it or can be successful. But I would tell them

that it's really very exciting, it's fun to work as an engineer. There are a lot of things that you can do and work on and be creative, be innovative. And anybody can do it. So, I would say, go for it.

LASEWICZ: Thank you very much for taking you time to sit down with us today.

CAROL: Thank you.

[END OF INTERVIEW]