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Interview with Lance C. Crimm

Item Type	Text
Authors	Scott, Thomas Allan (1943-)
Citation	Interview with Lance C. Crimm, 2019-03-21, KSU oral history series, Kennesaw State University Oral History Project, 1973- , KSU/45/05/001, Kennesaw State University Archives.
Publisher	Kennesaw State University Archives
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Download date	2026-06-07 13:35:28
Link to Item	https://soar.kennesaw.edu/handle/11360/7805

KENNESAW STATE UNIVERSITY ORAL HISTORY PROJECT
INTERVIEW WITH LANCE C. CRIMM
CONDUCTED, EDITED, AND INDEXED BY THOMAS A. SCOTT
for the
KSU ORAL HISTORY SERIES, NO. 153
THURSDAY, 21 MARCH 2019

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Kennesaw State University Oral History Project
KSU Oral History Series, No. 153
Interview with Lance C. Crimm
Conducted, edited, and indexed by Thomas A. Scott
Thursday, March 21, 2019
Location: Engineering Technology Center, Marietta campus, Kennesaw State University

TS: Lance Crimm is chair of the Department of Electrical Engineering at KSU and was selected by the Georgia Society of Professional Engineers as the 2019 Georgia Engineer of the Year. Lance, why don't we start with your background? You started at Georgia Tech in about 1990 and graduated in 1993. Are you from Georgia to begin with or what brought you here?

LC: I'm originally not from Georgia. I'm sad to say that I didn't know about Southern Tech at the time. What brought me to Georgia was Georgia Tech had made a Final Four appearance with their Lethal Weapon 3 [Dennis Scott, Kenny Anderson, and Brian Oliver, all future professional players in the National Basketball Association]. You might remember them from their basketball days. That was in the spring, March. I mean we are in March Madness now. I was in high school, and I was looking at various engineering schools. Because of that Final Four appearance, I was like, "Oh, Georgia Tech's not too far away compared to some of the other places I'm looking at in New England that are much colder."

Then we visited the campus in April or May of 1990, and I just fell in love with the campus of Georgia Tech. Also, we met a particular person. Sometimes it's a place that you fall in love with, but Bill Sayle [William Erven Sayle II] was the associate director of electrical engineering at Georgia Tech. He took time to give my father and me a tour around Georgia Tech's campus and to talk to us about our curriculum. It was actually Bill Sayle who inspired me to try to graduate as soon as possible. I heard you say that I graduated in 1993, which is really unusual for someone to only go to school for three years and then graduate. But it was Bill Sayle that encouraged me to try. I took a few classes with him. Unfortunately, he passed away about ten years ago [February 2, 2008].

TS: It seems like I've heard that name.

LC: Oh, yes, he was very popular on the Georgia Tech campus. He may have started [at Georgia Tech] in the 1970s [1970], but he had been at Georgia Tech a very long time before 1990. He is certainly one of the mentors that I've tried to exemplify in the role that I've been doing here.

TS: What was it about him particularly?

LC: I mean, he reached out to this high school student. I just showed up in his office. I don't even remember if we made an appointment. It wasn't like part of FASET [Familiarization and Adaptation to the Surroundings and Environs of Tech], which was their orientation, similar to our Ignition: [New Student Orientation at Kennesaw State

University]. He just showed me around, one-on-one, with my father there. And even afterwards, when I did enroll, he continued to remember my name. He saw me in labs and would talk to me, and I imagine he didn't just do it for me. He did it for other people too. So it was just that type of caring for students.

You know, some people say they care for students, and they do, but their care is predominantly done in a bureaucratic way on forms. Or maybe they never see the students' faces, but they are providing all sorts of ways for students to be successful. They just don't have that personal interaction. And that's fine. There's nothing wrong with that because some people might not be as extroverted where they want to do that. So we need both sets of people. But it was Bill Sayle that really inspired me to go to Georgia Tech. So that's why I decided to enroll in the fall of 1990.

TS: I remember Georgia Tech going to a Final Four, but I can't believe it was that long ago.

LC: Well we've done it another time since then [2004]. But that was the time when I was in high school, and I thought, "I have not really heard of Georgia Tech." I was from South Carolina, so it wasn't that far away. But I was a high school student. I certainly had not heard of Southern Tech. I wish I had heard of this place, but I just had not.

TS: Do you think you would have gone here instead?

LC: I think so. It was even a smaller campus. At the time it had about 3,500 students. Georgia Tech was right at 10,000. So I would have probably liked the small atmosphere. Another college I had looked at was Covenant College in Chattanooga [Lookout Mountain, Georgia]. They had 1,000. Now, I would have gone there if their degree was electrical engineering, but it was a [3:2] program with Georgia Tech. You got a Physics degree at Covenant in three years, and then in two more years, for a total of five, you could get your electrical engineering degree at Georgia Tech. That shied me away. I was like, "Five years! This is a long time. There's a lot of money, too—all this tuition I have to pay." So that was the motivation.

TS: So were you in an accelerated program [at Georgia Tech] from the beginning?

LC: Well, it really wasn't a program. It was just looking at the curriculum, choosing my courses wisely, and taking a lot of hours at once. We have had very few students do that. I would never encourage a student to take over twenty hours, and I was taking twenty-three a lot.

TS: And in engineering!

LC: Yes, I wouldn't encourage it. But it does sometimes happen. We have a current student right now. She is graduating this semester, and she has taken twenty-four hours sometimes. There was one semester, I think last semester, where she took something like twenty-two or twenty-three hours here at KSU. That wasn't enough for her, so she went and took six hours at Georgia State [University] of core classes. Then we were able

to transfer them in. So the point of it is there are some students that are able to take twenty-plus hours, and some aren't. When students can, you help them out to fulfill their goals and aspirations. She was able to do it with a 3.8 GPA [grade point average]. I could not do it as a 3.8 GPA. I did it with a 3.1.

TS: Of course, a lot of the students here have always worked while they went to school.

LC: Yes, a lot of the students we have do that.

TS: What attracted you to electrical engineering?

LC: I had been in a program during the summer of 11th grade, at Erskine College [Due West, South Carolina]. It's a very rural, small, only 500ish or so students at the time in the late 1980s. The program was called RISE, Research in Science at Erskine. There was a professor of physics there, [William F.] Bill Junkin, who was a PhD graduate from MIT [Massachusetts Institute of Technology]. He had started this program and got some funding from NSF, the National Science Foundation, where he would bring high school students to stay at Erskine for five weeks to learn about all sorts of engineering, not just electrical, giving you an exposure, not to just science, but computer interfacing and engineering and all sorts of things. In fact, I made this laser in high school because of that [pulling it out from where it was stored in his office], and I made this Protoboard in high school because of that program. I've kept them, and they still work. But that was the reason; always it seems to be people [that influenced me], and that's a good thing. People in my life like Dr Junkin encouraged me and motivated me to pursue electrical engineering.

TS: It's amazing that somebody with that kind of background would be at a school of 500 that didn't have an engineering major.

LC: Exactly, yes, it is amazing. He is retired now and in Florida. I stay in touch with him with Facebook. I know some people don't like Facebook, and I don't like Facebook a lot, but I do like how it enables us to reconnect with people from decades ago. It's amazing.

TS: I was just now looking at your shirt. I see the Kennesaw State logo. What is that above it?

LC: This is a Science Olympiad shirt.

TS: Oh, okay, we will talk about that a little later on.

LC: Yes, we have had a lot of Science Olympiads, and we're going to have to get the new [KSU] logo [that we unveiled a couple of weeks ago], because this one is the mountain instead of the [intertwined K and S]. You can see on the back that this one is from February 2018.

TS: I know you were interested in basketball. When does the racquetball playing come in? Does that go back to undergraduate days?

LC: I played a little bit in high school with my father, but always would lose to him. I was demoralized [laughs]. When I got to Georgia Tech I did play a little because there were eight courts at the time. Then when the Olympics came [to Atlanta in 1996], they got rid of eight, and now they're down to four. But I really didn't even get involved in it at Georgia Tech that much. It was when I was working here about 1999 or 2000. There was a student by the name of [Christopher] Chris Betz. He is now on our [Electrical Engineering] Industrial Advisory Board and has been for a long time. He works [as principal product applications engineer] at a company called IDT, Integrated Device Technology, in Duluth, Georgia. Their headquarters are in [San Jose,] California. It is a very large semiconductor company, but they have a location in Duluth.

He was doing an internship with them while he was a student [between 1997 and 2001]. He wanted to play racquetball. So we went over to the rec center here at SPSU, at the time it was SPSU, and we played racquetball, and I haven't stopped since. We've been getting students or faculty and staff together to play racquetball. It has just been a really good way to blow off steam, and also we did some intercollegiate competition with UGA [University of Georgia] and Georgia Tech and some others. So it's just something I did because I needed to do something to get stress out and exercise. We had two courts thanks to Karl [D.] Staber, [director of recreational sports, SPSU, 1985-2015; interim vice president for student and enrollment services, 2014-2015]. Otherwise we wouldn't have had the two courts for such a small campus.

TS: Well, I know you had to go straight into the master's program, and just four years from the time that you graduated from high school, you were getting a master's degree.

LC: Yes, it is a little weird. I got the bachelor's degree in June of 1993, and then I started the master's that summer. It was the first summer semester I had been in. As I've looked back on it, I shouldn't have gone that summer. I had just finished three quarters of undergraduate, and then I thought I was smart enough to start graduate school without any rest. I really bombed that summer. I didn't do as well as I had liked. I think there was at least one class I had to take again because I didn't do well.

I did not go to school fall quarter because I didn't have the money. I didn't have a fellowship. You had to have a GRA [Graduate Research Assistantship] or GTA [Graduate Teaching Assistantship]. I had received in the summer what they called a tuition waiver, so I didn't have to pay the out of state fee—I just had to pay the tuition—since I was still classified as a South Carolinian. So I just didn't have the money. Plus I was demoralized for not doing as well in the summer, so I took that fall off and taught at Westminster Schools [Atlanta] part time. That's really what I always...

TS: Did you teach math?

LC: Yes, I taught math and also a few science classes. There was one teacher who was on maternity leave, and so I started doing that in the August timeframe. Then she returned in January, and they didn't need me. So in that process I was able to get a GRA-ship at Georgia Tech. So I restarted the master's in electrical engineering in January of 1994 and graduated in December of 1994.

TS: What kind of research were you doing?

LC: I was mainly working with Dr. Paul [G.] Steffes and Dr. [William Whitfield] Whit Smith [Jr.]. Both are still there. I don't remember how long Paul Steffes was the graduate program coordinator at Georgia Tech, but it was for a little while. Whit Smith was one of his PhD students who had earned his PhD [in 1990]. Whit was mainly my point of contact that was like my boss-type person, and yet Paul Steffes was really my technical advisor. We operated out of the [Blake R.] Van Leer Building, the Electrical and Computer Engineering Building at Georgia Tech. We operated all of the satellite dishes. I did research on Ku-band satellite dishes, and C-band. Then we also were given by AT&T some very large [30-meter each] parabolic dishes down in Woodbury, Georgia [at the Georgia Tech Woodbury Research Facility in Meriwether County]. If you know where Gay, Georgia is, or Woodbury, Georgia, it is about half an hour, maybe 45 minutes south on highway 85, not on Interstate 85, but [Georgia state] highway 85. You just go south from Atlanta. Within 45 minutes or so you would get there.

There were two large [satellite dishes] AT&T had used in the 1970s just to do transcontinental communication with long distance telephones. But by the 1990s we had in the ocean this line that connected, and we didn't need the satellite dishes anymore. So they donated them to Georgia Tech, and they were pretty much in shambles. Then Dr. Smith and I and some other graduate as well as some undergraduate students spent time retrofitting those. Once we got them working, we did some research of trying to investigate comet impacts, both on Jupiter and some other places, just some astrophysics type research. That is what I was working on.

TS: Well if you took that quarter off, you got through mighty fast then, didn't you?

LC: Yes, I guess, I went that summer and then a total of five quarters, because it was that summer and then winter quarter, spring quarter, summer quarter, and fall quarter. So it took me five quarters to get a master's degree, but only nine quarters to get the undergraduate degree [laughs]. Plus there was a skipped quarter in there with that fall. I was working on the PhD during that time, and I actually was registered and working on the PhD in January of 1995 after I had gotten my master's in December of 1994. But there were several reasons why I quit. One of them was I was getting married; so I decided I needed to go get a job to make funds for the family.

TS: So you were all of 22- or 23-years-old?

LC: In June of 1995 I would have been 23. I was 22 at the time. Then the other reason was Georgia Tech just sold the Woodbury facility for like something around a million dollars

to a group called SETI, Search for Extraterrestrial Intelligence [Mountain View, California]. They had gotten wind that in July of 1994 we had observed some comet impacts into the planet Jupiter, using these really nice parabolic dishes that AT&T donated to Georgia Tech. I don't even know how they found out. Maybe they saw our website. They approached Georgia Tech, unbeknownst to Dr. Smith. He wasn't informed. I don't know if Dr. Steffes was informed. And they just bought it. Then we had no more research laboratory. So I was looking at, "Do I need to start over the area in which I'm doing research because the research lab is gone?"

I had one friend who was a graduate student much closer to getting his PhD. He started a job with SETI. So I had to think, "Do I want to be involved with the search for extraterrestrial intelligence?" I just didn't feel comfortable doing it; so I made that decision at that time. I think the most pragmatic reason was I was getting married. I was like, "I want to get married." So that is why I stopped the PhD program in about March of 1995, when all that happened.

TS: When did you discover that you might be interested in teaching?

LC: Well, I always was interested in teaching even in high school. I was in a program called Teacher Cadets. It was a teacher assistant class I took; so I thought I wanted to teach high school at the time when I was in high school. That was one of the reasons I did teach at Westminster Schools to try that out. Then when I did that, I found out that parents, especially at Westminster Schools, were very difficult because all children, of course, should be in AP [advanced placement] and honors, according to them, since all of their children are special. I got really exhausted. I was 21. I was very young.

TS: You weren't much older than the students.

LC: No, and I didn't think that way back then. I just couldn't handle the parents, maybe because I was 21. I mean, they were just so difficult.

TS: There are places other than Westminster.

LC: Yes, when I got this job offer in 1997, I had one other job offer. I don't know if I've told many other people this, but the other job offer came from Gwen Cleghorn, who had been an assistant principal of some sort at Westminster who had hired me to be part-time there. She had moved from Westminster after two or three decades. I had connections to Westminster because the church I was involved in started Westminster Schools. So there were a lot of connections. Well, she left and went over to Spalding Drive, right up Peachtree Industrial [Boulevard], to the Wesleyan School, a brand new private school [that opened in the fall of 1996 at the Peachtree Corners location, having moved from its original (1963) site at Sandy Springs United Methodist Church]. She had asked me to interview, so I did, and they had offered me a job teaching science and engineering at this new school. I had to decide whether to come to SPSU [Southern Polytechnic State University] in 1997 or go there. It was a hard decision because I liked both opportunities, but I did decide on coming here.

TS: There is a story about you coming out here to look for a library book.

LC: Yes, that probably happened, I think, in about 1994. I was taking graduate classes. I was always very concerned about money and how I was going to afford tuition. I paid my way through all of undergraduate school and graduate school. I did get scholarships, but my parents didn't have any way to help me financially. I did get the Pell Grant as an undergrad. You don't get the Pell Grant if your parents make enough money. It is something not necessarily for children of impoverished parents. We weren't impoverished. They made maybe in the early 1990s in the low \$30,000s. We had enough money to put food on the table, but not enough to send their eldest son to college. So I was always mindful of that.

Textbooks have gotten a lot more expensive than they were then, but I still couldn't afford buying textbooks. So what I would do, I had a practice of just going into the Georgia Tech Library. They had terminals, not computers, and I didn't have my own computer at home back then. So you would go into the library and use this terminal and through G-tell, you could find out where these textbooks might be somewhere. I would get a book sometimes from Macon State [College] or UGA, and they would send them by the inter-library loan. I would check them out through the Georgia Tech Library rather than having to pay for the book. I would just borrow the book. Well, there was one time. I don't even remember the name of the book. I wish I could find this out now, but there was one book that was available at this little campus called Southern Tech. I saw where it was located, and I knew I could just drive here. I didn't need to wait for the book to be shipped.

So I just drove up here, checked out the book through the inter-library loan, and then I walked around. The only person I met that I remember was Alberta Cook. She was the administrative assistant in the G building for ECET [Electrical and Computer Engineering Technology Department]. I just really enjoyed the conversation I had with her. I didn't know what this campus was like. I probably only talked to her for about ten or fifteen minutes, but I thought to myself, "This would be a neat place to work." I still wanted to teach, and I did apply to work here in the fall of 1996, but received a letter saying that the budget cuts prevented them from hiring anybody, so try again. I hope I still have that letter. I'll have to look. But I did apply again the next year, and that was the year that [President Stephen R.] Cheshier had his difficulties and [Vice President for Academic Affairs] Harris [T.] Travis had some difficulties. But there was still a need [for faculty members], and so at least me and [Walter E.] Walt Thain, who is still here—his office is only three doors down—started the first day of September together, and have been here ever since. There are other people that have been here longer than us, of course, and people that have come since then.

TS: Well, let me ask you, did you do a master's thesis or a practicum or what?

LC: There was a thesis option, but you could also focus on just getting the classes done and get the master's degree that way. And that is the way I did it.

TS: Then you worked as a hardware engineer for three years. What was that about?

LC: So probably in March of 1995 I was starting to look for jobs, realizing I wasn't going to stay in the PhD program. It is interesting. You would know more stories than I do about the past, but if I told my students that the way I found my job was through the classifieds of the AJC [*Atlanta Journal-Constitution*], it just seems really weird, doesn't it?

TS: Nowadays.

LC: It does. But there was no Monster.com; there was no LinkedIn; the Internet, the World Wide Web was really starting out.

TS: That's what supported newspapers for years, those classified ads.

LC: There was a classified ad. I had been a fan of Apple Macintosh for a long time. I didn't want to go work in California and Cupertino because I thought that was too far away. I would have loved to get a job at Apple but didn't want to go to California. Well, this AJC ad mentioned that there was this company that had partnered with Apple called DayStar Digital [Inc.]. In the 1980s, when they were founded, they primarily had been a fabrication facility where Apple had come to know them somehow. I don't know where that connection fully came from, but Apple started asking this little group to solder up their printed circuit boards for their Macintosh computers. Over a period of time a relationship ensued with the Founder/CEO, Andrew [F.] Lewis, who is actually a Georgia Tech grad. There is a [David and Andrew Lewis] Endowed Chair, named after him, in the [Daniel Guggenheim School of] Aerospace Engineering.

He was looking to expand to more than just fabricating the circuit boards for Apple. He wanted to actually design some multiprocessing workstations. So that is what was in the AJC ad that appealed to me. I applied for it, got an interview in March of 1995, and started April 3rd of 1995. I worked there not quite three years because it would have been April 3, 1995 until September of 1997. It was great because I was able to learn. Apple still is a highly proprietary private company. Even though they're a public company, they don't want to tell you how their technology works. You can think about it this way: IBM did not mind so much having all these PC clones back in the 1980s and 1990s because they licensed their technology. But Apple kept it close. They didn't want it cloned. It was this close relationship Andrew had with [Steven Paul] Steve Jobs [CEO and co-founder of Apple Inc.] and some others that allowed us to actually do some systems that would be Macintosh computers. They weren't really Apple computers, but they were Apple computers [laughs]. It was totally different and new.

It didn't last long because Steve Jobs got wind of it. We did it from 1995 until 1997. I never even thought the way these clever people are. We were licensed for the operating system of system 7. When system 8 came out, and he didn't license us to do system 8, it folded the company. Unfortunately, the company became so dependent on the new multiprocessing computers that they were designing, that all those upgrade cards that they were soldering were put off to the side, and we weren't doing anymore. So the

whole company had to fold. It is really sad. The company had been around for fourteen years (1983-1997), and then it folded on September 30, 1997.

TS: Well, you're still using a MacBook Pro aren't you?

LC: Oh, yes. I've just always been a Mac [user].

TS: I've got a MacBook Air.

LC: Those are nice, very lightweight.

TS: Yes. So you definitely needed to start applying for jobs at that time, I guess. You got the job here. What was the campus like when you came in the fall of 1997? What did they expect faculty to do? Was it all teaching or what?

LC: It was a time of unrest because, you know the history of Stephen Cheshier being asked to leave and Harris Travis being asked to leave?

TS: Right, and I wanted to ask you: It sounds like you knew it before you came?

LC: Yes, because I interviewed, I think, around March or April. You are interviewed in the springtime for a job that starts in the fall. My boss, Julian [A.] Wilson [Jr.], the one that was hiring me, the department chair of ECET, was one of the five department chairs that wrote the vote of no confidence in Stephen Cheshier and Harris Travis.

TS: I knew [Michael G.] Mike Murphy [chair of Computer Science].

LC: Okay, I knew Mike, too, really well after the fact. I didn't know him at the time, of course. I really liked Mike. So I was curious. I had been told after the interview, probably around the May or June timeframe, "Hey, we want to hire you, but there's a lot of unrest on the campus right now." Julian was very transparent with me and told me what was happening. He didn't know for sure if I would be able to start in the fall or not. Even though they wanted to hire me, it was uncertain because we didn't know what was going to happen. So I didn't know for sure that I was starting in September until probably about the August timeframe of 1997.

TS: So Cheshier would have been gone.

LC: He was gone by then because [Daniel S.] Dan Papp had already started [as interim president] in July.

TS: Okay, so Papp was the one, I guess, that gave the final approval?

LC: Right.

TS: And Travis would have still been here.

LC: Yes, he was here for a while.

TS: Well, it must have been disconcerting for a new faculty member.

LC: Yes, I mean, I was so amazed that I could teach and be here, that I did let those politics kind of be in the periphery of my thinking. I was very young. In 1997 I would have been 25.

TS: That was my age when I started at Kennesaw Junior College in 1968.

LC: At 25 I was just so excited to be able to teach these classes. I got to teach circuits. I had two versions of circuits. I had the DC circuits. That was a freshman level course. We met five days a week, Monday through Friday, at 9:00 o'clock. I thought and still think that's the best way to teach circuits. Every single day I had about forty students. What's really odd. There was one student, Glen Pierce, in that class that I met with last year. He is an alum here now, and I still stay in contact with him. He was in that first class. He was from Australia and had that accent. I ran into him at a Home Depot just by chance. We remembered each other, and we had lunch about a year ago. I still haven't reached out to him since. But it's just amazing. I don't know all forty students that were in that class, but I remember one other one, YahNica Montford. She was in that first class too. I guess maybe the point of this is I really enjoyed being with students.

I was 25 at the time, and they were probably 18 to 22, most of them, although I had one student in his 70s. I remember him. He was a civil engineer, and he was really nice. Some of my students that were in their 40s, you know, questioned how this 25 year old would know anything. I did have some of that. So I was so focused in my first year in teaching my classes. You asked, what was it like? How many hours did we have to do? I did that five-hour class and it was quarters. This was our last year of quarters [before converting to the semester system]. But I had that five-hour class. I also had two labs, so they met for three hours. That would have split the class into twenty and twenty. The way we interpret workload these days, that would have been considered five plus one and a half plus one and a half, which would have been eight. Then the other class I taught was a circuits course for non-electrical majors. It was a course for mechanical majors and civil engineering technology majors and maybe some others. It was a three-hour course. So that would have meant I would have done eleven hours, and it had two labs.

TS: Wow, you were doing a lot of teaching!

LC: Yes, it was a lot of teaching. So eleven plus three would have been fourteen hours in terms of our workload today. The way we do workload today is professors typically do either nine or twelve. If they're research focused, they do nine. If they're teaching focused, they do twelve. Then we have instructors who do either fifteen or twelve. So with me doing fourteen my first quarter here, it's about equivalent to what an instructor is being asked to do with no research expectations. And at that time there weren't really research expectations. There were service expectations, and it was more than just serving in committee meetings. I remember when [President] Lisa [A.] Rossbacher came in the

fall of 1998, which would have my second year, she started to get us down the pathway of doing research. But she made a point to explain that service is more than just serving on committees. It's what you do on committees. Are you a chair of the committee? Are you responsible for actually doing things on this committee? Or are you just attending meetings? But the primary focus in 1997 would have been on teaching and service, and professional development was encouraged, but certainly not near at the level it would later.

TS: What about doing practical things out in the community—professional projects?

LC: There wasn't a push for it. They certainly embraced it if people did it, but people would get promoted and tenured as professors if they were teaching well and they were serving well. Professional development, I think, was encouraged, but it wasn't stressed like we do now.

TS: Right. So even though it was a university by that time...

LC: Yes, we became a university in 1996 mainly because of the Olympics.

TS: But it didn't really affect scholarship expectations?

LC: Not until Rossbacher came. I wasn't really here during Cheshier's tenure to know what his expectations were. When Dan Papp was here in that interim year, he was just band-aiding us, keeping us together. So he really didn't focus on the future as much. But when Lisa came in [August] 1998, she did lay an action plan. She had a strategic plan to get engineering on this campus. She had a strategic plan to make sure we enhanced and incorporated more research into our faculty. So she started, and it obviously took many years to accomplish all the goals that she had. But she was here about sixteen years, something like that. She made a lot of changes. She did not do them drastically because there is certainly resistance any time there's change. But I think it was Lisa Rossbacher that really grew us into being a university. We might have been named a university in 1996, but we weren't really acting like a university probably until 2000. So we got named as a university in the 20th century, and we became a university probably in the 21st century.

TS: Well, they told us in 1996 that the name change wasn't going to make any difference. But it really did.

LC: It does.

TS: Were there committees that far back to develop the straight engineering programs?

LC: The first committee I served on to do an engineering program would have been in 1999, and it was to focus on doing what was called hardware engineering, not computer engineering, not electrical engineering, but hardware engineering. The thought was that Georgia Tech wouldn't really be concerned about us competing with them if we had a

nontraditional name like hardware engineering. We met for at least half a year. We met with Dan Papp. He was then senior vice chancellor for academics and fiscal affairs [2000 to 2006]. We got pretty far to the point of meeting with him. I remember meeting with him in Building B, and him just saying, “This looks all good. Y’all have spent six months to nine months preparing the proposal and everything.” But he just didn’t feel like Georgia Tech was ready at the time. He thought that when we went up for engineering, because he knew we wanted to, that we should stress the evening option—that there was going to be an option for students to do engineering courses in the evening timeframe.

TS: So nontraditional students?

LC: Right. He also liked the idea Lisa had. Lisa’s idea I thought was really good. You might remember that Stephen Cheshier had tried to get engineering on this campus in the 1980s, and he was not able to. So it was not like it hadn’t been tried before. But Lisa’s point was to try to do some niche programs. See, software engineering got approved about the same time. [Editor’s note: The Board of Regents approved SPSU’s Master of Science in Software Engineering on July 9, 1997 and the Bachelor of Science in Software Engineering on February 14, 2001]. So we had the hardware engineering committee, which I was actually the chair of, and we had the software engineering committee, which Mike Murphy was actively involved in. Jorge [L.] Diaz-Herrera was on it and a number of others, and they did get [a Bachelor of Science in] Software Engineering. Jorge was department chair of computer science, and Mike Murphy was the dean of the School of Computing and Software Engineering.

TS: By the way, did Julian Wilson survive the turmoil when Dan Papp made them apply for their jobs again?

LC: He did not. But he stayed as a professor and retired, I don’t know the exact year, but, maybe in the 2004 or 2005 timeframe. I still keep in touch with Julian. He is near Chattanooga. When he was here, he had a home on five acres where he had built it into a hill. It was one of those homes that did not have a roof. It had the earth as its roof. He built it while he was working here. He might have built it in the late 1970s or early 1980s. But also around the backyard where his wife liked to do landscaping and plant flowers, he liked to do railroad trains. He had a particular type of tracks you can do outside, and he had tracks and railroad trains going into the house and out of the house. I had been there a few times, and he also had a pipe organ. It was amazing! When he moved to Chattanooga, he decided to build himself a trolley that humans can ride on. So he has himself a trolley and a YouTube channel if you ever have a chance watch it. He’s still “teaching” students who watch YouTube on how to build stuff. But, he was the one that hired me. He was one of those five department chairs. I don’t think he even reapplied for his job. He might have, but he did not get it. Kim Davis was our interim chair for a long time, and then [Charles L.] Charlie Bachman became our chair maybe about 2006.

TS: That late?

LC: Yes, because Kim Davis was interim chair. Well, technically Paul Wojnowiak was interim chair for like a quarter during the ousting. Then Kim Davis started as the interim chair, I believe, in the fall of 1997. It was just a few months that Paul Wojnowiak was interim chair. Kim Davis stayed interim chair for a long time, three or four years. I'm not sure how long it was. I even served as assistant. We called them different names from time to time. For a while, it was department head, and then it was program head, and then there was department chair. They are just different names for the same job. But I was assistant program head for Electrical and Computer Engineering Technology one summer. I think it was 2002, while Kim Davis had to be out that summer.

I didn't leave that department until 2008. It was ECET, Electrical and Computer Engineering Technology. It would have been EET during David Summers' day when he was chair. Even when Julian Wilson became chair, it was EET, until they started computer engineering technology. Then they changed it to ECET. We started a telecommunications engineering technology program in either 1998 or 1999, but we never changed our name. But we did try to do hardware engineering and software engineering. And software engineering started in 2001. I've heard people say that Construction Engineering is our first engineering program. I don't think that's right. I think they started in 2006 [June 7, 2006], then the Bachelor of Science in Mechatronics Engineering on [October 11], 2006, and Systems Engineering [on March 21], 2007. So Software Engineering is way ahead of those. I think that was our first official [undergraduate] engineering program, and then we kept doing these niche programs, construction, mechatronics, systems with a really good support from Lockheed [Martin]. Then after we did all that, Lisa was thinking along with Zvi Szafran, the vice president for academic affairs at the time, "We've got all these niche engineering programs. Now we need to see if we can do the traditional electrical, mechanical and civil. We proposed those in the 2006 or 2007 timeframe and got them [on August 12], 2009.

TS: [Thomas R.] Tom Currin played a role in all that, didn't he?

LC: Oh he did. There were so many people that played a key role. I think Lisa Rossbacher, of course, was our main leader. She went through several VPAAAs [vice presidents for academic affairs] before she finally found Zvi Szafran. It took all these people to do it. There was a meeting that I went to with [R.] Glenn Allen. You've probably heard of that name. He was the mechatronics engineering founder. Glenn, Zvi, Tom Currin, and I went down to Georgia Tech when we were proposing these degree programs, and they didn't like the idea. You know, we were trying, and Zvi was very good at being very smooth and telling them, "We're not interested in competing with you. We really do just want to collaborate and do some traditional engineering programs with some evening options that you don't offer. Plus our focus is going to be applied and not nearly the research, theoretical focus that Georgia Tech is interested in." So there was still some resistance, but I think without Zvi, without Tom Currin, without Lisa Rossbacher, without so many people, we wouldn't have engineering. I mean, we needed all those people all at the right time to do all these things.

TS: So August 2009 is when the board approved.

- LC: Yes, and then we started in August 2009 too. We were ready. I don't know if we were ready or we weren't ready, but we were ready to start. So we started in the fall of 2009, not with many students. And, as you know the rest of the story, we grew so fast. We had been saying that there is demand in Georgia for a second engineering institution, and Georgia Tech kept saying, "No, there is not. No there is not." We proved them wrong for sure because as soon as we started, Georgia Southern [University] started an engineering program, and then UGA started one. We grew from twentyish electrical engineering students in 2009 to now over 600. Mechanical engineering went from like fortyish to fiftyish in 2009 to over 1400 now in just ten years. That definitely means there was pent-up demand.
- TS: I think most of the growth since consolidation has been on this campus. I've also heard that Georgia Tech may have been happy for Southern Poly to get engineering rather than UGA.
- LC: You're absolutely [right]. I don't know how much we can say while it's being recorded. I hope I can tell you everything. That was one of Zvi's smooth points. Zvi even said, "We're not the dog in this fight that y'all need to worry about." That was a quote he said. He didn't say it was UGA. He just said we're not the dog that you need to worry about. There are two things Zvi said that are not ringing true. At the time he wasn't lying. It just was the truth at the time, and things have changed. So one thing he said was, "We will never be interested in a master's or PhD program in engineering."
- TS: He said that?
- LC: Yes. That was "just not something we were going to be interested in," and we weren't at the time. We just wanted to start [undergraduate programs].
- TS: So "never" probably wasn't the right word.
- LC: I know. And the other thing he said was, "We want to crack this door to let Southern Polytechnic have engineering and not any other USG [University System of Georgia] institution. We want to crack the door. Let us in, and then close it."
- TS: And it didn't work that way.
- LC: It didn't work that way. It is what Zvi wanted and a lot of us wanted. We wanted to open it up for us and then close it, so that UGA could not and Georgia Southern could not. But I think it is good for the state that we have five engineering institutions now, including Mercer [University]. It serves our state much better to have options for students across the state regionally.
- TS: It makes some sense to have an engineering school in the southern part of the state.
- LC: Yes, and Georgia Southern is south of the gnat line. So it's definitely south.

TS: Right, Statesboro. Well, you were SPSU teacher of the year in 2008. How did that come about?

LC: I don't know exactly how it came about. I know the process. The process was we had a committee of people that received the outstanding faculty awards from the previous year select who would be the outstanding faculty for the next year. We had P and Ps [Policies and Procedures] on all this stuff, so there is documentation. Mary Phillips in the president's office was the person in charge of keeping all the P and Ps together. There was a P and P that explained any faculty person or staff person or student could nominate someone for an outstanding faculty award. Then those nominations would go to the outstanding faculty award winners from the previous year, and they would select the next three, four, or five faculty, depending on how much funds there were in the foundation. They got them plaques and a check of maybe \$500.

I think Charlie Bachman nominated me, and there might have been others too that had nominated me. The committee selected me. Then President Rossbacher, at the time, would select among the three, four, or five outstanding faculty award winners, who would be the teacher of the year. She selected me, and I don't know what her rationale was. She just did that hand selection. So every year [we had a teacher of the year]. I don't know what the first year was. It would have been maybe into the mid to late 1990s. We had a teacher of the year, and I guess we ceased it once we consolidated. We have other awards now [including KSU's outstanding teacher award].

TS: Right. Well, tell me about the Science Olympiad. How long have you been involved with that, and weren't you director for Georgia? Is this a Georgia-wide or nationwide organization?

LC: It's a national organization that was started thirty-five years ago in Michigan by a man named Gerard [J.] Putz. [Editor's note: The national organizational meeting occurred in 1984, and the first annual Science Olympiad National Tournament took place at Michigan State University in May 1985]. Georgia didn't get involved until 1990. Of course, I wasn't involved then. I wasn't here. GYSTC, which you've probably heard of, Georgia Youth Science and Technology Centers, was started under Stephen Cheshier's tenure as president here [in April 1989]. GYSTC now is all across the state. It was originally headquartered on this campus. It moved to Chattahoochee Technical College for a while. Now it's on the Kennesaw campus of Kennesaw State University.

A staff member by the name of Kay Marshall did Science Olympiads on this campus in Marietta from 1990 until 1999, when she was ready to retire. I don't know if she notified Lisa Rossbacher or someone else that she would be retiring, and someone needed to take over the reins of the Science Olympiad. She was doing the elementary one in May on [the SPSU] campus. She was doing the middle school Science Olympiad in the fall, early December or November, and the high school one in the spring. So she was doing three Olympiads a year. The elementary school one in May seemed to be the largest one that we would do. [Anthony L.] Tony Tilmans was our dean [of Engineering Technology] at the time, and he asked me if I would be interested in just coming to a committee meeting

to learn about the Science Olympiad. The dean of the College of Arts and Science [Edward A. Vizzini] asked one of their faculty, [Philip E.] Phil Patterson, to come to that meeting. Phil Patterson was in physics. I was in ECET. We went to that meeting. Kay Marshall was there. They told us about Science Olympiad. I was still clueless. I didn't know what was involved, but it sounded exciting that students would come to our campus that were middle schoolers or high schoolers or possibly even elementary schoolers. Although she told us at the time that she was trying to get the elementary tournament moved to Kennesaw, and that did happen.

The elementary tournament is still at the Kennesaw campus. I'm actually meeting tomorrow with Neporcha Cone [interim associate dean for undergraduate programs and associate professor of science education in the Bagwell College of Education]. She and a lot of other people do a lot of work to make that statewide. She runs the elementary event with Sally Creel. Sally is someone in K12 [supervisor, STEM and Innovative Practice, Cobb County School District]. So I just thought back then, and I still think now, it is such an excellent program! It links the university with K12. I have been able to be involved in so many different programs between K12 and university- or college-wide things by being involved in this program. But it was a national program that expanded to 49 states because we don't include West Virginia. They just don't compete for some reason. Most of the schools in West Virginia just drive over to Virginia, so they can compete.

But Georgia is a pretty active state for the Science Olympiad. We are certainly in the top ten of participation in Science Olympiad. One way that that manifests itself is we have two high school teams go to the national tournament rather than just one. There are only nine other states that this happens to. It is dependent upon how many schools you have involved. Some states, my birth state of Mississippi, for example, just have one statewide event per year. We have, I think, eleven or twelve regionals. Then of those regionals, the top three or four teams go to the statewide tournament, this year at Emory [University]. I think it is going to happen [on March 23]. We had a regional here on February 23rd. We've done a statewide tournament here many times. I don't know how many times for sure, three or four times. But we just haven't done a statewide recently. The national tournament was at Georgia Tech in 1996 and at Augusta [State University] in [2009]. [William] Bill Wellnitz was the state director of the Science Olympiad at Augusta. He was a biologist. Because of his relationship with the national people, they were able to host the national tournament.

I keep in touch with him a little bit. He has been retired for six or seven years, and he lives up in Minnesota. He asked me to consider being the state director at that time, whatever year that was. So I did. I also partnered with Kelly Price who was at the time an assistant vice principal, and then she became a principal [and eventually Forsyth County Schools Director of Academic Standards]. Now she is retired. All these people are retiring [laughs]. But, in that process, I was state director along with Kelly Price for four or five years. We both decided to really grow this program in the State of Georgia. We needed more leadership from K12 leaders. So now the state director is out of Forsyth County, and his name is Scott Cole. He has been doing it for two to three years, and he

has done a fabulous job getting more competition sites, getting more schools especially in rural areas involved. So we were really happy with how Science Olympiad is going in Georgia. We are still not content. That's one of the reasons I'm meeting with Neporcha tomorrow. We're trying to think of what are some ways that we can perhaps write some grant proposals to try to reach out to the hinterlands of Georgia and get the Science Olympiad program in the rural schools because there are so many people that aren't being touched by it.

If you don't know what Science Olympiad is, it's basically an applied version of Science Fair. Science Fair is where you have all those tri-fold posters. People come, and they've done their research. But it is really kind of dry because it's just you're seeing what they did, whereas, at a Science Olympiad there are many events. We usually have about twenty to twenty-four events. This year we've got twenty-three, and they are a variety of things. We had things that were like design airplanes and fly them. We had things you had to do like the bridge contest that you typically do in high school in a physics class. We've had a circuits event. There are just diverse events, not just in science.

TS: Kind of like those things you did early on.

LC: Yes, it is like hands-on stuff as opposed to just theoretical research, which is perfect for what we do here at Southern Polytechnic College [of Engineering and Engineering Technology]. So that's why I've always enjoyed being involved in it. I've been doing it since 1999. This year was a little bit easier than last year, but last year we had our first year where we had to deal with this program called Minors on Campus. You might have heard that the Board of Regents instituted a policy where if you have minors on campus, people that are less than 18 years old, you have to have good procedures to make sure they're safe, that you've done background checks on all of your judges and all that type of thing. So the bureaucracy in the administration of running a Science Olympiad now is a lot more challenging. We've got more paperwork and red tape to fill out, so that we have event supervisors that have been background checked and these minors are protected. We even have to do things like keep files on the competitors until they reach 18. Some of them are 12 and 13, so we have all sorts of files on them for five years.

TS: For what purpose?

LC: I imagine, if there ever was a lawsuit, then we have the documentation and the waivers. We have waivers they sign, you know, that they're not going to sue the university when they're injured or anything.

TS: I was 17 when I started college. I'm glad they didn't have that back then.

LC: Yes, I know. I think we're just so risk averse in this day and age because there are so many people that sue each other.

TS: But there are some reasons for it.

LC: Oh, yes. You have to protect yourself.

TS: It's a change of the subject, but I wanted to ask you about being a concert pianist and making your own nine-foot concert grand piano. Did you build it from scratch?

LC: No, it's not built from scratch. I have to explain it. It's a 1927 Baldwin, but it had been in a hurricane in Florida. So it was basically just the guts of the piano. I didn't have the money. A nine-foot concert grand piano that is brand new is over \$100,000. I mean, you can't get them.

TS: Yes, not cheap.

LC: No, and when I bought it in 1994 there was no eBay. There were not these types of things. So I had gone to Cooper Music and they had had this thing in shambles. They were trying to get rid of it. They had found a company in North Carolina that was going to take it off their hands. But I was able to get it from them, just the nuts and bolts of it. Then I did also hire a famous piano technician for Spivey Hall [Morrow, Georgia]. Craig Miller was the main rebuilder of the piano. I did some things he didn't like. I put some MIDI [Musical Instrument Digital Interface] circuitry inside the piano, so any time you pressed a note, you could connect it to a computer, and you could make it like a keyboard, using the actual keys. But he did the things I can't do, like he laid all the strings, and he bought new hammers to make the piano actually be able to work.

He did it very inexpensively. I think he charged me somewhere between \$3000 and \$4000 to do the whole thing. I bought the guts of the piano for right at \$15,000. So for under \$20,000 I was able to get a concert ready piano. I don't know if it's concert ready now. I think if Craig spent maybe a couple of hours tuning and voicing it and like charge me \$200 or \$300 to do so, it would be concert ready. You could put it on Spivey Hall stage or any stage, and it would be ready. So what I did, basically, was just take the guts of an old piano that was in shambles, and then be able to get a nice working instrument for very inexpensive.

TS: Well, I listened to your "Waterfalling" composition.

LC: The "Waterfalling" one is actually that piano. There are some recordings that I have done on other pianos. I do a lot of Facebook videos of that piano. So that piano, I still have it, and I will probably have it until I die. But all that started in 1994 when I got it. And it's an interesting story because I'm just a weird person. I had just graduated with my undergraduate degree in 1993 and my master's in December of 1994.

TS: How did you afford it?

LC: I didn't even have a job yet, but I found this thing, and I wanted to get it done. So the first rental house I had it in was in Buford, Georgia in May of 1995. That was when it was still getting rebuilt, so it wasn't fully done. Then when we moved to Decatur in

1996, it got fully done there. Then we moved to Marietta in 2003. I've had it for a while, and it's in really good shape.

TS: Well, you had to want to do it pretty badly to spend that much money back then I would think.

LC: Yes, and I only had \$5000 to my name at the time. So I did spend \$5000 of the \$15,000. The other \$10,000, I tried to get a loan. I went to at least ten banks, maybe more, and the only bank that would provide me a \$10,000 loan was Wachovia. SunTrust laughed at me. A lot of people laughed at me. I was young. I was probably 22, I guess. I would tell things like, "If I wanted to buy a \$10,000 car, you would let me. It is just going to depreciate, and I'm not going to be able to keep it for a long time." They didn't care. So Wachovia gave me a \$10,000 loan. I paid it back within a year. I still have a Wells Fargo account because of it [following the purchase of Wachovia by Wells Fargo and Company in 2008].

TS: Did you take a pay cut when you came to Southern Poly?

LC: I actually did not because I was a young engineer, maybe is why. I was making somewhere around \$45,000 a year at the time at the Flowery Branch location where I was working at DayStar. When I came here, the salary for nine months was less. It was \$43,500. But I knew that I would try to work summer also and get summer pay, and that pushed me up to \$58,000. So I actually had a slight increase by coming here, which is unusual.

TS: I've heard some stories [from Southern Polytechnic faculty members] the other way.

LC: Yes, I know [laughs].

TS: Do you do anything with our School of Music?

LC: I know Stephen [W.] Plate, [director of the School of Music]. I've gone over there to the practice rooms. I haven't really done anything. I want to. I think we're just both too busy, and we haven't. I have done random things like when we're at the Jolley Lodge. I might play on that piano some. Piano for me has been kind of like my extracurricular activity. It's not been my job. I wanted to major in piano. I thought about doing that at Covenant when I had applied there, and I got a piano scholarship there. I really wanted to, but I just didn't feel like I could provide for a family with music. I've heard all the stories about how you would be a poor musician working in bars or piano bars type things. So that's why I didn't do it. But I want to. If anyone can facilitate doing more stuff with the School of Music, I would love to. I'm not a classically trained pianist. We have a lot of classically trained pianists at KSU. We have a wonderful piano program. So mine is a little bit more nontraditional.

TS: Well, just last month I interviewed Laurence [E.] Sherr, [professor of music, composer-in-residence, and KSU's 2018 recipient of the Distinguished Professor Award]. I just got

through editing his interview. He is internationally recognized for his Holocaust remembrance compositions and his Music of Resistance and Survival Project.

LC: I need to meet him then. I haven't met him. These people are like heroes.

TS: Great. In terms of research interests, you are an electric bicycle enthusiast. The whole idea of electric bicycles fits, I guess, with your interest in the disabled. Is that who they are for, primarily?

LC: Right. My first interest was because we built this parking deck right outside of our building, the only parking deck on this campus. That was a very large parking lot. When they started building that parking deck, before this building [the Engineering Technology Center] was even constructed, we lost a lot of parking. I'm one of these faculty, if I have a 10:00 o'clock class, I get here about 9:55. That's just the way I am. There was no parking because they were working on the parking deck. I needed to get to campus. I live three miles away, so I started biking. But I would get here, and I was sweaty. I would take a shower at the rec center [Recreation and Wellness Center], and I just didn't like it. Then I decided I could put a motor on this thing, so that was the reason [I was interested in electric bicycles]. I wasn't really altruistic at first. I was trying to figure out how to get to campus and not have to park. Originally, I didn't have a motor on it, but then I put a motor on it to get here faster and not be as sweaty. Then I started thinking, "What are some things that we can do to research with wheelchairs or how to do other DC motors that the disabled would maybe need?" I had remembered a professor that had done that at Georgia Tech, so I collaborated with him a little bit. That is how that all got started.

TS: And then the solar energy for charging, what's that?

LC: I decided that it would be neat to charge this battery that I had, rather than using the electricity out of the wall, to also use solar energy just to be more renewable. It was certainly the thing that was the buzzword around campus, to be sustainable and charge it with the solar power. In the G building [Engineering Lab Building] we had some solar panels, and that's where I would charge it. I haven't used it [recently]. I still have this bicycle. It's sitting in my garage with a flat tire. But we moved to Cherokee County in 2014.

TS: That's too far to go.

LC: Too far to take a bicycle, just way too far, and, plus, the parking is ample now. I had a class at 11:15. I think I arrived at approximately 11:05 or something, and there was a parking spot. On the Kennesaw campus it's a little harder to do that.

TS: Yes, it is.

LC: You get to that campus for a meeting. Sometimes I have meetings in the Kennesaw Hall building. I used to call [W.] Ken Harmon [former provost and interim president], but

now I just ask Angie [Angelina Conti], his secretary [assistant to the provost], and say, “Are there two spots available that I can park just for the one hour that I need to meet with Kat [Provost Kathy Schwaig] (or whomever I need to meet with)?” They are real nice about it, and it’s so helpful because I don’t like parking in that parking deck and having to walk. I’m just being lazy, I guess.

TS: You could use an electric bike to get from the East Deck to Kennesaw Hall. When you do research projects like this, do you have an expectation of doing a paper on it or is it just the practical application that you’re interested in?

LC: I, personally, am more interested in getting the practical application. I have—I guess I almost said, “I have had to write.” And it is I’ve had to. I’ve been heavily encouraged by bosses. Charlie Bachman, Kim Davis, and all of them heavily encouraged us to write the papers. If it was up to me, the documentation aspect of an engineer is the most boring part. This is one of the things I tell my students too because we have to teach them in senior projects and in other classes that you have to do documentation of your work. I remind them, “No one is going to buy your user manual. They want to buy the product. I know you want to do the product because that’s the most fun, but you also have to do the documentation.” So there have been times where I have done documentation, and there have been times where I just don’t take the time to do the documentation because it’s boring.

TS: Okay, I understand. Tell me about microturbines to generate hydroelectric power. I remember going through the TVA dams as a child and seeing the turbines and generators.

LC: Yes, they’re very large.

TS: They were giant things. What is a microturbine?

LC: So a microturbine is some research that I haven’t been doing lately, but I really think that hydroelectricity is one of the most sustainable forms of generating electricity. I was really sad in [19 May] 2014 when the Allatoona Dam [powerhouse] had a fire, that they didn’t [immediately] spend the time and energy and the cost it would take to retrofit that generator powerhouse. What’s really cool about the Allatoona Lake, as well as Lake Lanier and Lake Oconee and all these lakes, is they were designed to prevent flooding. They were designed to also be a means for hydroelectric power. And they were also designed for recreation.

TS: It was the same thing with the TVA dams.

LC: Yes, in Tennessee. So, unfortunately, Allatoona has not been generating electricity. With all this rain, at most, we were 11 feet above full pool. It is 20 feet before it’s at flood-stage. They did decide to open one of the turbines [in March 2018, according to the *Rome News-Tribune*], and they’ve been draining the lake and creating electricity. Not a lot, 2 megawatts an hour, so they said. But I was motivated because of that. I was thinking, [the use of] microturbines is the idea that you’re not doing large dams, that you

are thinking, “How can we do this so that small creeks, like Sope Creek, or even small rivers, you can set up some dams and have a little bit of hydroelectricity that you wouldn’t have to distribute over far distances, that maybe you would have just in a neighborhood?”

It didn’t ever take off. It’s not to say that it won’t take off. It’s kind of like solar power. Solar power works really well in Nevada, in Arizona right now, but not so much right here in Metro Atlanta because there’s so much electricity for much cheaper. Same thing with hydroelectricity: I’m convinced the reason why Georgia Power is not trying to fix the turbines at Lake Allatoona, is they can get what they call clean coal for much cheaper. They can get natural gas for much cheaper, and they can generate this electricity with those two sources of energy much cheaper than they can with the hydroelectric power. But still, I think in the future, there may be points in time where we’ll have either small communities, or even individual houses, whether it’s with solar power or microturbines. That way, we wouldn’t have to distribute these kilovolts of electricity across so many hundreds and thousands of miles.

TS: How big is a microturbine?

LC: You can get them as small as a foot and a half to two feet wide. They’re very small, but they are not generating megawatts.

TS: You have a creek near campus, don’t you?

LC: Yes! We have Rottenwood Creek right here, and we could dam it up. I don’t know what permission we would need [laughs]. I actually am very fascinated with the microturbine idea. If I had more than forty hours in a day, it would be really nice. We are limited by time, but it is certainly what I’m very interested in. People talk about solar all the time, and I like solar. We have Dr. [Sandip] Das [assistant professor of electrical engineering], on our faculty here. He is working on researching CZTS cells. He has been with us for at least four or five years [since fall 2014]. He has been researching how to have better solar cells. He has actually fabricated a solar cell on this campus without a clean room, which was quite remarkable. CZTS stands for carbon, zinc, tin, sulfide, which sounds awful because it is sulfide in it, but those are actually less caustic than the silicon and how we produce silicon solar panels now. If we ever get to a point, and I think we will—maybe it will be 2030; maybe it will be 2040—where you can buy ceiling or roof tiles that would power your whole house all the time—we just aren’t at that technology right now, but if we were, it could put Georgia Power out of business. As long as you have enough batteries and enough solar panels on your house, you could have your electricity that you need. It would feel like Star Trek.

TS: Wow. Well, you’ve already told me a little about your role in getting the straight electrical engineering program here, starting August 2009. Is that when you got a department of electrical engineering?

LC: No, we actually started as a division of engineering. We never had a department of engineering. They called it a division with many programs. So electrical engineering was one of the programs, mechatronics engineering was one of the programs, also systems engineering and civil engineering. The only one that wasn't was software engineering because software engineering was with computer science. So there was this Division of Engineering with Tom Currin as the associate dean. We didn't have a dean; he was the associate dean. Then we had various program directors or program heads, and I was the program director of electrical engineering. Glenn Allen was in mechatronics. Renee [J.] Butler was in systems and industrial engineering. Sam [J.] Beadles was civil. I hope I haven't let anybody out. At one time mechanical was [Richard J.] Rich Ruhala. At one time, mechanical was Cyril [B.] Okhio. Mechanical had a lot of program heads as they tried to figure out who was going to lead it long-term.

Then we became a department just a few years before consolidation, 2011 or maybe 2012. We became what was called a School of Engineering. This was all done internally, where Tom Currin had requested Lisa Rossbacher to change the name from Division of Engineering to School of Engineering. Then, we had departments. So we were the Electrical and Mechatronics Department in 2011 or maybe 2012.

TS: You had mechatronics with you?

LC: We had them with us. One of the reasons was that Glenn Allen had passed away with his brain tumor [on April 3, 2012]. There were only two or three faculty members at the time: Ying Wang, Chan [H.] Ham, and Cyril Okhio. None of those three really wanted to be the leader. So we put electrical and mechatronics engineering together as a department. We had systems and mechanical engineering together as a department. We had civil and construction engineering as a department. Then we consolidated with KSU.

TS: So as soon as the School of Engineering was set up, that is when the departments came into being?

LC: The three departments. When the consolidation was announced on Friday, November 1, 2013, what is real interesting about that, which you may have heard, is that Sunday, two days later, was our first meeting with ABET [Accreditation Board for Engineering and Technology] for our initial accreditation. There was a lot of unrest on campus the following Monday and confusion. But when consolidation was announced, we were still departments, and over that period, from November 1, 2013, to January 6 of 2015, that is when we decided, "How are we going to become departments as we morph into this new university?" As you know, with the OWGs, the operational working groups, we didn't know immediately, but after a period of time between that 2014 timeframe and 2015 timeframe, it was decided that we would have an electrical engineering department separate from mechatronics.

Civil and construction stayed together. Mechanical and systems separated. Even since then, it is hard to keep up with all this reorganization because since then, industrial engineering technology merged with the systems and industrial engineering department,

and they are together. The Electrical and Computer Engineering Technology Department merged with the Mechanical Engineering Technology Department and became the Engineering Technology department. But Electrical Engineering stayed its own department since consolidation, and Mechatronics Engineering stayed its own department since consolidation. It's different because in Mechatronics, they only have five faculty members now, and we have twelve. We are not the largest, though. Mechanical has, I think, eighteen faculty members. They have more than double our students. So our departments are not all equal, in terms of size and function. We do different things, and it's just different.

TS: What operational working groups [OWGs] were you on?

LC: Too many to remember [laughs].

TS: The Southern Poly faculty had it worse because you had a smaller faculty, and the goal was to have a balance on all those committees.

LC: Yes, that might have been why. I wanted to call the groups something else than OWGs. Maybe, we could call it OWLs, operational working leaders, instead of groups. I do remember one of them I was on. Dan Papp was actually at it most of the time. I always liked hearing from him. I view him just like Lisa, as an excellent leader, and he was very personable. Lisa played racquetball with us a few times, which was unusual for a president to do. Dan never did, but he did come to the rec center, even up until the last year of his presidency. When we were consolidating, we would see him over there on the treadmill while we were at the racquetball court. We would talk to him, and he would talk to us about Russia [his academic specialty].

TS: Well, he would go to the Employee Fitness Center on the Kennesaw campus, too.

LC: Yes, you have to. When you have so much stress that is the best way to get rid of your stress.

TS: Yes, so you would talk to him over there?

LC: Oh, yes. I played racquetball with [Stephen A.] Steve Hamrick today. He was our registrar for twenty-something years [1996-2013]. I play with him almost every Tuesday and Thursday. Because he was our registrar, he knew Dan. So it wasn't I that knew Dan. It was Steve Hamrick that knew Dan. It was Karl Staber who knew Dan. When Karl Staber and Steve Hamrick were there, and Dan would be on the treadmill, he would come and talk to us. We would ask him about Russia because of all the alleged collusion [of the Trump campaign with Russia] that we were hearing about. But it was just great to have been involved in this OWG process, even though it was challenging.

TS: Yes, so you were on a bunch of them?

LC: Oh, yes, at least four or five.

TS: Did anything worthwhile come out of it, do you think?

LC: One of the things, I think, that was really worthwhile was, we didn't call it a road map, but we had some name that allowed students to figure out what the differences would be. It was the way students could look at their core group of classes and see what classes they would need to take to adhere to the new criteria because they were caught in the middle. I think that OWG was the most helpful in helping to figure out what classes students would need to take in the core.

TS: You remember your reaction, November the 1st, when you heard the news.

LC: I think most of us were in disbelief because we had been told so many times that there was never any thought to consolidate KSU and SPSU. We had been told that a lot. We had been told that years prior. This came out of nowhere. There was no warning. The last we had thought about it was probably two years prior to this, in 2011 or so. We had heard rumors of it, but then they just went away.

TS: Because other schools were consolidating?

LC: Well yes, the other consolidations, right. But we were caught in disbelief. It was really a shocker. The way it was announced: President Rossbacher gave a speech to the whole campus at noon right over there at the student center, but before that, all the deans had called in department chairs and told them about 10 o'clock that morning, on Friday. We had an emergency meeting. I remember him [Dean Currin] calling us all and saying, "We need to have an emergency meeting." I didn't know what it was because he didn't say what it was. It was very scary because what is so important that we need to go for an emergency meeting? I thought he was announcing his retirement or something. I didn't know what it was. And then we found out. So I think disbelief is the right word for us faculty. The students, very quickly, got upset and had lots of discontent, and they voiced it pretty feverishly. I think a lot of faculty were disappointed, at the time, and just were in shock. But at the same time, we in engineering had to focus because we had worked so hard to get up to this ABET accreditation time period. For those that don't know what an ABET accreditation is, in engineering, it is a pinnacle to achieve. It's hard to do. We couldn't think about consolidation too much. We had to think on getting that accreditation, which we did. We did a good job getting our accreditation done. Then over the period of a year, we went through the consolidation difficulties. You might have listened to "Consolidation Blues" on my website. I wrote that song.

TS: Oh, okay. I'll have to listen to that.

LC: Yes, I wrote it when I was frustrated. But having said all that, though, Tom Currin asked me to write an article for *Georgia Engineer* about that time in the 2014 or 15 timeframe, talking about all the positive aspects consolidation could provide. I did write that article, and I focused only on the positive, which is the right thing an engineer is supposed to do. When things are beyond our control, constraints that we are not really in charge of, we are supposed to embrace what we can and do the best we can with what we can. That's

what we have done since consolidation, and it has been the best for us. The biggest thing that KSU has been able to do for us, that allowed us to grow, is just to have a platform. KSU is much larger than SPSU ever was. The marketing that we have now, at KSU, is astronomically larger than we ever did before.

TS: Seems like what they tout most of the time are things happening on this campus.

LC: I know [laughs]. At the same time, I think the consolidation, at least from my personal opinion, has been good in terms of going to the Kennesaw campus. We didn't have a school of music, and I'm very fascinated with music. We didn't have a college of the arts, so meeting [Dean] Ivan [Pulinkala] and Stephen Plate and seeing the things that [Associate Dean] Harrison [O.] Long and all are doing makes us more of a university. Lisa Rossbacher said we were going to be a comprehensive university, but we're really a university now because we have nursing, and we have music. We didn't have those things. It might be on another campus, but still, it just feels more like a university now that we have just such a breadth of programs across the entire university.

TS: Well, I've felt pretty much the same way. It is neat from the perspective of the Kennesaw campus to have engineering and architecture as part of the university. It makes us more complete as a university.

LC: It does. Because [before consolidation] we had been told, "You're going to be a complete university." Well, not really. So it really has been good on all fronts.

TS: Well, great. I think, maybe, the most troublesome thing was just the name of Southern Polytechnic State University going away. You kept it with this college [Southern Polytechnic College of Engineering and Engineering Technology]. Were y'all happy about that?

LC: There were some that were very happy, including me. I want to keep the Southern Polytechnic name as long as it is still a reputable name, and I think it will stay a reputable name. There might be a time, five or ten years from now, where maybe the reputation of KSU engineers is so high that the Southern Polytechnic name won't really be recognized, and so maybe it will go away. I don't know. But we needed to have some continuity, and I think that really was a good way to provide continuity. I'm a little sad or disappointed for our architecture students and maybe some of our software engineering students that their diplomas don't say Southern Polytechnic on them anywhere. It is a little disconcerting, but it is what it is. I'm glad we were able to retain the name for a little bit of posterity, and we'll see how long it lasts. I know there are some people that suggested we should remove it, and just call ourselves the College of Engineering. Well, I definitely don't want to call ourselves the COE, (College of Engineering), even though there's a lot of acronyms already being used. We are not just the college of engineering. We are the college of engineering and engineering technology. Some people say, "That's such a long name!" Well, just call us SPC, Southern Polytechnic College, if that's your issue. But we'll see how long it lasts. I hope it lasts a good decade more, but we'll just have to see.

- TS: [Dean C. Richard] Rich Cole said he didn't want to be called the Southern Polytechnic College of Architecture and Construction Management because he wants to get one of these \$5 million donors to have naming rights for the college.
- LC: Oh yes, that would be nice. I'm sure if there is someone that wants to donate \$5 million, we would change the name in a heartbeat.
- TS: Probably so. Well, the Southern Polytechnic College probably has some very successful engineering graduates out there that could afford to do that.
- LC: Yes, we'll have to find one or two.
- TS: I always thought that they should have named this campus just the Southern Poly campus, instead of the Marietta campus.
- LC: Right, and I don't know why they didn't. That would have been neat. You wouldn't have had to necessarily have it on your diploma. It just would have been the name of the campus.
- TS: Well, I know Tom Currin said, at the time, pretty much what you just said, that consolidation was advantageous in terms of college visibility. He thought it would attract more students and grant dollars. It certainly has attracted students. Grant dollars, have they been pouring in?
- LC: Yes, they have, so he was correct. It really provided us a platform. He received a little bit of grief from what he thought about that, but he was definitely a visionary and correct because we have received more research grants as well as donations. I really think people would not have known about us without the platform that we have. We were that little secret in Cobb County, and we are no longer the secret.
- TS: So foundation funding, too?
- LC: Yes, this [Norman J.] Norm Radow [and Peter Fitzgerald] gift [in 2018] was a million dollar donation [to the Paul Radow Endowment for mechanical engineering students with military service or who are adult learners]. I don't know if that would have happened [without consolidation]. It might have happened. But that is just one example, and we're replete of examples. Of things that have happened since consolidation, and that is just amazing.
- TS: Well, you alluded to the fact earlier that enrollment has grown. Of course, part of it is that you didn't have an electrical engineering program until 2009. Still, the numbers are dramatic. I looked at 2012-13, which would be the last academic year before the announcement of consolidation, and you had 317 students the in electrical engineering program. That number doubled to 678 by 2017-18.
- LC: It's hard to believe, isn't it?

- TS: Yes, and the number of degrees granted went up in those five years from 30 to 105, so that has more than tripled in that time.
- LC: We've lived it, but it is still hard to believe.
- TS: And it is not like it is easy to get into these programs. They require a minimum 2.7 GPA in selected math, science, and engineering courses.
- LC: And our students are amazing, not just from their GPAs. They just do so amazing things. I learned through the campaign that President Whitten is doing that 71 percent to 80 percent of our students that graduate with engineering degrees stay in Georgia.
- TS: Do they really?
- LC: Yes, I didn't know it was such a large percentage. It is not so for Georgia Tech. Theirs is somewhere in the 40ish percentile.
- TS: Well, they have been trying to be a national university all along anyway.
- LC: Yes, so this is the point that we were trying to tell them ten years ago, and that is ringing true. We are looking for students who we can train people to stay in Georgia. And they do! They are doing exactly what we thought they would do, and they're doing it with great success. It is really phenomenal what they're doing.
- TS: I was going to ask you later, but this might be a good time. Traditionally, Georgia Tech was more abstract and graduate school focused, and Southern Poly more applied. Do you think that's still true?
- LC: I think that's still true, yes. Georgia Tech is still on the same path of becoming more and more theoretical and more nation-focused and also world-focused. In the 1970s and 1980s they were pursuing it, and they are still pursuing it now, but they are just continuing to grow in that area. When we do research, our research is applied research, so it makes a difference.
- TS: You mentioned earlier that you became program director of electrical engineering after the Board of Regents approved the electrical engineering degree program in 2009. Then in 2012 you became chair of the Electrical and Mechatronics Department. In July 2015, you became the chair of the Department of Electrical Engineering. Talk about that.
- LC: When we consolidated, we actually de-consolidated. We took mechatronics and made its own department, so Chan Ham could be the department chair. So, really, it was a little less work in one sense, that I had less faculty. But it was also a growth year because we were growing in terms of faculty and students. So it has always been a fun adventure. I don't think there was much difference from 2012, being a department chair, versus 2015, other than the consolidation was happening, and all sorts of other activities.

- TS: Right, right. Do you enjoy being a department chair?
- LC: Oh, yes. I think one of the reasons I enjoy it the most is I do get to interact with all of our students, but I also get to help some of these faculty realize what I think is important, knowing the students and not just your research. I'm not trying to brag or anything like that, but you look at other departments, and their focus is different. Our focus is hands on and working with and caring for the students in a very personal way. That is what I have wanted to instill in faculty, and I've been able to do with training these eleven other faculty members. We also have a very diverse group of faculty. We don't just have research faculty. We have about five researchers, and the rest are focused on teaching. So we have, almost, a 45/55 split of research-based faculty versus teaching faculty. Currently, our college is wanting to move from a 70/30 split that we currently are of teaching and research, to a 50/50.
- TS: Seventy percent teaching?
- LC: We're currently 70 percent kind of teaching, and 30 percent kind of research at the college level. And so the college, as part of their roadmap to being an R2 university, wants to make it more 50/50. And it is something we've been doing quite a while. But the biggest joy of being the department chair is just to be able to lead these other faculty in the areas you think are important, and I think students are the most important, and that's what we put all of our focus on.
- TS: Well, I guess you are one of two full professors in your department?
- LC: So, Bill [M.] Diong was hired [as an associate professor] in 2011. He is now a full professor [since 2017]. We have some people that are associate professors that should have gone up. I keep encouraging them every year. I've encouraged Walt Thain, who started when I did twenty-two years ago come September. I've encouraged Brent Jenkins to. Yusun Chang will be soon. Since we are a relatively new program, we don't have too many full professors. It's just Bill Diong and I, but we will have some coming up. We're a growing department, and the good news is, I've had only two faculty members leave. They had good reasons. Deidra Hodges was my first hire. I hired her, technically, a few days before I hired Yusun Chang, so Yusun Chang is our second faculty member. He is still here. Deidra was approached by the University of Texas at El Paso. She didn't even apply for the job, but they approached her and offered her a job. She turned them down, and she told me about it. Then they contacted her again, and gave her some sort of research package that she just couldn't turn down. It was really what she wanted to do, so she left.
- She was here for three or four years, and she became SPSU Teacher of the Year in her third year. It took me ten! It took most people ten. I don't know of anyone that did it in three years. She was so wonderful, and the president knew it. Everybody knew it. UTEP knew it, and they took her away. So we were really sad to have seen her gone, but she was tremendous. And then Kuosheng Ma, whose office was actually right here before we changed it—he decided to leave after four years because his wife was in

California. She is a cardiologist. She was hoping to get a job at Emory University in their teaching hospital, and it just didn't work out. So he decided, due to family reasons, to go back. So the point of all this is just to say, we have had two faculty that have left, but other than that, all these faculty have been a team, together, and I hope they stay a long time. You don't train a faculty in one or two years. It takes years, and this faculty is a tremendous faculty in double E [electrical engineering].

TS: What do you think your greatest accomplishments are as a department? You focus on teaching, but also scholarship.

LC: Yes, I certainly think seeing our students become licensed professional engineers in the State of Georgia is a major accomplishment. We really like to see it.

TS: I meant to ask you: You didn't become a licensed professional engineer right away, but you did a few years down the road in 2006. Why not right away, and why when you did?

LC: I was actually encouraged to do so by Charlie Bachman because I was going up for full professor, and I didn't have the PhD. He thought, "This would be a good thing for you to do to apply for full professor." So it was his mentorship, his encouragement, to do it, and I did it. When I did, it was interesting because he had encouraged Brent Jenkins to do it too. His office is near mine. I didn't know he had encouraged him. Charlie Bachman was a great department chair mentor for me because he would not tell you everything he did. He was wise. So I ran into Brent on the test day. He was in the same room. I was like, "Oh, I didn't know you would be here." It was in Macon with hundreds of people. But that was the main motivation. Charlie Bachman had encouraged me to do it.

TS: Great. I wanted to ask you about your master's program, and I've never been real clear on the dates. I found some minutes of the Board of Regents for May 10, 2016, when they approved substantial changes to the MS in Applied Engineering. It sounded to me like the main change was to make it totally online, whereas before there had been a lot of laboratory requirements. Does that make sense?

LC: That is true. I know the history of it. I can tell you the real history.

TS: Tell me, how far back does the MS program go?

LC: Originally, it was the MSET program, the Master of Science in Engineering Technology, with a focus on electrical. Omar Zia had been the coordinator of that for a very long time, and he was getting close to retirement. We didn't ever have more than twenty to thirty engineering technology masters' students. At the heyday with some DeVry University instructors that had come over here we were at twenty to thirty. We were typically at fifteen to twenty students year round. It wasn't very sustainable at all. So it was Tom Currin's idea that we could change that program to a Master of Science in Applied Engineering. The idea was to have an electrical focus, a mechanical focus, and a civil focus. This idea was good until we consolidated. We had planned to do this prior to consolidation. When we consolidated, Mike [L.] Dishman [associate dean of the

Graduate College, 2014-2015, dean since 2015] and David Baugher [senior assistant dean of the Graduate College] came over and talked to us and said it just was too confusing to do a single master's program with all these options. So because of that, we proposed a Master of Science in Civil Engineering and Master of Science in Mechanical Engineering, and got them through the Board of Regents.

But we were stuck with this Master of Science in Applied Engineering Electrical that we had been doing after the MSET program transition. It was Tom Currin's idea, as well as [former associate dean] Tom Ball's idea, that all these graduate programs needed to be completely online to be sustainable because they thought that we tried it the face-to-face traditional way, and it didn't work. They thought that we would try this online way. So we have, and yet it is still not large. We've been doing the master's program, MSAE, now for, I guess, close to five years. We are hoping that with our new dean, when he comes or she comes, that they would like to ask the Board of Regents to change it again from MSAE to just an MSEE [Master of Science in Electrical Engineering], just a more generic name for the degree that people would recognize. It's the only Master of Science in Applied Engineering Program I have ever heard of. Students will call us and say, "What does [applied engineering] mean?" That's why we would like to just call it MSEE. Georgia Tech has an MSEE and some other institutions too. We hope that we would have at least forty to fifty students in the first year and see how it grows. So that's the history behind it. It kind of morphed from our Master of Science in Engineering Technology.

TS: How far back did that go?

LC: Before I arrived in 1997. Years ago, we had a Master of Science in Technical Management [approved by the Board of Regents in December 1985]. That morphed into an MBA at SPSU. Then when we consolidated, there was already an MBA in the Coles College [of Business], so we took [SPSU's] MBA degree program and changed it to a Master of Science in Engineering Management housed in the Systems and Industrial Engineering Department [under the direction of Bill [D.] Bailey, associate professor of Industrial Engineering Technology and Quality Assurance and SIE graduate program coordinator]. So it's just changing names.

TS: Okay. I saw where *US News & World Report* had our online engineering graduate degree ranked 59th in the country. It was the only online engineering program in Georgia to make the list.

LC: I saw that.

TS: Does that include the MS in Applied Engineering?

LC: I believe so. Tom Ball was the one that gathered all the data to submit to *US News & World Report* for that.

- TS: You talked earlier about the focus on applied engineering. Is the focus more on getting students out into jobs as opposed to going to graduate school?
- LC: Yes, we generally say workforce development instead of jobs or careers. That's the actual buzzword that we use. That's basically another Tom Currin-ism that we have. Once we get this new dean, I'm sure a lot of change is going to take place. That typically happens with a new dean. But it's really encouraging. I've taught students in these ten years that the Bachelor of Science in Electrical Engineering has existed [since August 2009]. Our first graduating class in May of 2012 had three graduates. One was an engineering technology graduate from here in the 1980s. He had something like twenty-two or twenty-three PEs [professional engineer licenses] across different states, but he couldn't get a PE in Florida, and he couldn't get a PE in Tennessee because he had an engineering technology degree. His name is Mike Jones. So he came back and got a second degree in electrical engineering as one of our first class.
- TS: Then there was Taofeek Orekan. He was from Africa. So we had an American with Mike Jones, a previous graduate. We had Taofeek Orekan. He has since finished in December of 2018 his PhD in Electrical Engineering at the University of Connecticut. He is not our only one, but he is our first one. There are other students of ours that are in PhD programs. It is the minority. Most students go into industry, and they work. They just get their undergraduate degree. We also have a nickname for him; his nickname is TK instead of Taofeek. But it is now Dr. Orekan. It is so encouraging to see that our students have gone on to get Master's and PhDs.
- TS: Who was the third?
- LC: The third one was Bao Nguyen. He was Vietnamese. So that was our three graduating class. It is just so interesting to see that we do have graduate students among our current group of students as well.
- TS: Talk about a diverse graduating class!
- LC: Yes! Just with three.
- TS: Well, tell me about the 2019 Georgia Engineer Of The Year, chosen by the Georgia Society of Professional Engineers.
- LC: That was a surprise.
- TS: Did you even know you were nominated?
- LC: I did know I was nominated. Tom Currin had won it three years ago in 2016. He was one of my nominators. He was the principal nominator. And there were some other professors that nominated me, including Dr. Whit Smith who was kind of my PhD advisor. I asked Dr. Smith to send in a nomination. It was really both Dr. Okhio who works here as one of our faculty and Tom Currin that were encouraging me to actually

apply, and then became the nominators. I didn't think that I would become the Engineer of the Year for the whole state. The way it works is there are different divisions. You get nominated to be Engineer of the Year in the Education area. Somehow, every year they have different licensing boards that do the judging. This past year it was Alabama. I don't know how they determined based on the materials of the application, but somehow they determined I received more points than the others in private practice or industry or military or whatever the other categories were. So it was definitely an honor to be able to represent KSU and Southern Polytechnic. It certainly is amazing.

TS: Well, it means something that you've had two since 2016 out of this college.

LC: We've actually had three. Nancy Turner was the 2017 Georgia Engineer of the Year in Education. She is in civil engineering. Hopefully, we will have more! We've had the most of any [university]. Part of that might also be that Georgia Techers are not really active in professional societies. Their focus is on research. Our focus, again with workforce development, makes more sense that we participate in the circles that we're working with.

TS: You have at least twenty-two thousand people that are part of the Georgia Society of Professional Engineers.

LC: Yes. Now it's predominantly civil engineers, because they need to have a license, and it's also predominantly Georgia Tech grads. But that's changing too because we've had engineering now for ten years. You give it another ten or twenty years, and the predominant number of alumni in the Georgia Society of Professional Engineers are going to be from KSU. It's not right now, but it's growing.

TS: Well, I have just a few concluding questions. Let me ask you first about the intellectual atmosphere of Kennesaw State, and especially the Marietta campus. How has it changed over the years since 1997?

LC: Certainly the focus more on research and publishing your work has changed a lot in the last twenty years.

TS: Do you have to publish to get full professor now?

LC: Even to get tenure and become an associate professor, you have to have more documented research than you would have had in the past. We are now proposing, as we're on this roadmap to R2 [Research 2 university], even more stringent requirements to become a tenured professor here. This may be embarrassing to say, but I don't know if I could even be accepted as a new faculty member in 2020 based on my qualifications. I don't know if I could have gotten tenured in 2020 with my qualifications. So the intellectual atmosphere certainly has changed, and yet we are still, I think, a university that is hands on in our engineering focus, which is good. We are also a very personable campus. You know, we don't treat students like numbers like some institutions and universities do. So even though our intellectual acumen is so much higher than it used to

be, I'm glad that we are not becoming elitist. I don't want us to ever be elitist. I do get that perception with some other universities with engineering in them, including my alma mater [Georgia Tech]. There is a lot of elitism that goes along with what they do, and I don't want us to be like that. I hope we never are.

TS: Do you think that this is university-wide or is it more the Southern Polytechnic College?

LC: I don't know as well with other colleges as much as I know about our college. I think certainly what keeps us maybe humble is we have students that are not of the socio-economic class that some of these other esteemed universities might have. Both the Kennesaw campus and the Marietta campus have students that need to go to work. They don't just go to work for work experience, although they do get work experience. Sometimes they go out of necessity; they need money. The types of students that we attract are not the ones that have affluence, plenty of money to pay for tuition, and not have to work. So we have a real pragmatic student body, and I think it keeps the faculty real too, even though the faculty are more intellectual than they were maybe two or three decades ago.

TS: I think both campuses have had that same trajectory. Maybe the Kennesaw campus moved toward scholarship a little bit earlier than this campus, although I know that some faculty members at SPSU like [Thomas E.] Tom Rotnem [professor of political science] and [Albert J.] Al Churella [professor of history] were doing fabulous scholarship before consolidation.

LC: They were, and so was Julie [R.] Newell [special assistant to the provost and professor of interdisciplinary studies]. I mean, she is in history [of science] and she does amazing things. What we were really impressed with was our history professors, like Julie in the history of science and Al on railroad history, is that it related to Southern Polytechnic's mission. They were not doing history for history's sake. It was history that related to polytechnic-type history.

TS: Right. So expectations have changed over the years.

LC: Very much so. They are definitely changing year to year. Part of that is frustrating because you are on these [promotion and tenure] committees and you are constantly changing the guidelines of how to get promoted and tenured. It's like a moving target. Every year or two, it keeps getting stricter and stricter. I remember one thing Zvi Szafran said. "It is like once people are in the club, they try to prevent other people from getting in the club." What he was saying about that was like once you are tenured or once you receive the full professorship, you were able to get in with less strict standards than you are requiring of the other people. In a way that could be bad. Now as this university grows, it makes sense we are going to have it some, but we don't need to do it just to keep people out of the club. So we'll see how it goes as time goes on.

TS: Yes, I don't know that I would want to be a new faculty member just starting out at Kennesaw State today.

- LC: I don't think I could make it. I mean, it is just not my personality. And yet, I can tell you as a department chair, I have hired people that are not just PhD people. Bill Diong had [three and a half years of experience with Sundstrand Aerospace (now Collins Aerospace)] and much acclaim [for his work in research, design, and development]. We are so blessed to have these people with the expertise that they have. But, see, you and I and others started when we were just not what we are today.
- TS: What about the field of engineering? How much has it changed in the last twenty-two years?
- LC: Well, certainly technology has changed, but there were engineering institutions in the 1980s and 1990s—Georgia Tech one of them among others—that were requiring a lot of scholarship. So we are as an R2 never going to be requiring the types of scholarship that other R1 engineering institutions are doing. But certainly with technology changing ... When I started, the World Wide Web had just begun to be used. When I started here, we were still using a terminal registration system with computer terminals—not computers, but just terminals. It was about two or three years later after the semester conversion in 1998 that we started using Banner, when we started having the more graphical way to register. So certainly, engineering and technology have changed and every year they change.
- TS: Well, what has kept you here for twenty-two years? Have you ever thought about going elsewhere? What keeps you here?
- LC: I feel like this is my family, not only the academic side. Especially when we were Southern Polytechnic State University, we had general faculty meetings every month. So I rubbed shoulders with English faculty and history faculty and math faculty. I miss that a lot. We still do it a little bit informally on our campus, but we don't nearly do it as much. I still get to see, on the Kennesaw campus, some people that are in the administrative roles, whether it is the president or the provost or these types, and other chairs [and associate deans] like Harrison Long and others. But I do miss that diversity that we had where there weren't silos of, "Here's engineering, and here's history, and here's our other departments." We were really just a family. The only other place I thought about going to is just to be closer to my parents. They are currently in their low 70s, so I think they are fine, but when they get into their 80s and 90s, they might need me closer. But by then I will be in my 60s, so maybe they'll need to hire a nurse instead. I don't know.
- TS: Or move them over here.
- LC: That is the only thing that would make me want to move from Atlanta. They are still in South Carolina near Charlotte, and my two brothers are too. They are in Fort Mill, just across the line. So the only reason I would want to leave is to be closer to family, and they're up there. Right now our youngest is 13, so we don't know what he is going to do when he goes to college. The other two are at KSU. One of them is doing mechanical engineering here. He is a freshman. The other one is doing statistics on the Kennesaw

campus. So we'll see what the 13-year-old does. Then when all the children leave, who knows? You just have to take it one day at a time, sometimes. But I love this place. I can't really envision me leaving.

TS: I guess you're still in your 40s, so you still have a ways to go, I guess.

LC: I want to do that 50 years [at SPSU/KSU]. I'll be 74 in 2048 when we celebrate the centennial [of the first classes of the Technical Institute/Southern Tech].

TS: Well, I would be 105 by then [laughs]. It sounds like your long-range plans are whatever the future has in store for you.

LC: Yes, you have to be flexible. You make plans, but you can't make it rigid plans because you never know what could change.

TS: I meant to ask you earlier on, but this building I think opened up in 2010, the Engineering Technology Center. It's a fabulous building.

LC: It is.

TS: How did that affect your feelings for the campus and your opportunity to do things?

LC: I was thinking about this about a week ago. Some of us are already taking this building for granted. We've been here less than a decade. But it is a fabulous building. It brought us together. The G Building [Engineering Lab] is the electrical building of the past, from 1962 I thought, or maybe 1961. We still use it for some research. But that was our building, and that was where all of our instruction was taking place for electrical. Mechanical was in the K Building down the hill. We didn't see them but like maybe once a month at a general faculty meeting, just like we would see math faculty and other faculty. But now with mechanical here, electrical here, computer here, and mechatronics here, it fosters collaboration so much better. Not only that, of course, the lab facilities and the instructional facilities in this building far exceed these 1960s buildings.

I mean, we certainly had put smart boards and we'd had projectors and we did all those things. When I first started in 1997 there was only one room with a projector, and we had those overhead projectors where you put the transparencies on, right? And moving to this building, there was one faculty member ... I hope you have a chance to interview [Donald D.] Don Horton [associate professor of mechanical engineering technology] before he retires ... He still uses transparencies and overhead projectors. He has been here thirty-five years, and he is retiring at the end of this year. He is very active also in the GSPE, Georgia Society of Professional Engineers, but he still likes the transparencies. But the point is that this building, with its lab facilities and instructional facilities, is tremendous. I think we are already taking it for granted though—not just the new people that never knew what the old was like, but even us old folks that have been around for a while. We just don't remember how bad we had it in these older buildings. So it is an amazing building.

- TS: I think this campus is looking prettier and prettier all the time.
- LC: Yes, and currently they are putting \$5-something million into the old electrical building. We put \$3 million into it back in 2012 mainly for asbestos abatement, so it got rid of the asbestos. We also took some classrooms and shrunk them a little bit so that we could get a hallway to go the full length of the upstairs because it was not ADA [Americans with Disabilities Act of 1990] compliant. There are four different stairwells, and to get from one side of the building to the other side of the building, you would have to go downstairs, and then go up another stairwell. So that was not good. So we did a renovation for \$3-millionish in around the 2012, just after we moved into here. But, yes, I love the G building too. I'm someone that really likes memories, and so I don't like throwing away my old laser, and I don't like throwing away anything.
- TS: Well, good for you.
- LC: I'm glad that we didn't raze that building, even though we did raze the K one.
- TS: Your laser needs to go into the KSU archives.
- LC: I don't know about that. It was built in high school. I don't know if I put a year on it. I etched it with just a knife. Yes, it says 1990.
- TS: Well, you need to be thinking about your papers and creations sometimes going into the KSU archives. Not enough faculty think about the institutional memory.
- LC: One example might be this slide rule right here. It was going to be thrown away in a dumpster when we moved. It is a large instructional slide rule. We used to have one for every classroom. When we moved from the old G Building to here, they wanted to throw them away. I was like, "I cannot throw every one of them away. I have to keep one." What you would do with this is you would hang it up on your chalkboard, with these little hooks, and then use these little holes right here and show the students how this thing worked by the demonstration tool. So now what we use is a projector and a calculator, right? We show them how to do the trigonometric calculations with a calculator on the screen. But that's how you did it in the 1960s and 1970s when you didn't have a calculator. So I can't throw it away.
- TS: No! It needs to be a museum exhibit.
- LC: I can't. There's one more I know. Have you heard of the Wilder Building [T Building—Wilder Communications Center] down the way here? There is one in there too. So, yes, I will not throw it away. I'll give it to the library before it gets thrown away. But, somehow, I just rescued it and salvaged it.
- TS: When you were an undergraduate, did you still have a slide rule?

LC: No. Most people stopped using slide rules either in the late 1970s or early 1980s. In the late 1960s, you had those red LED-powered calculators that drained the batteries. You could hit sine of 30 and it wouldn't show you one half immediately. My father had one, and I still have it. You had four AA batteries. You put in your degrees that you were trying to get sine of. Then it would just sit there, and it would blink at you because it would take five to ten seconds to get you the answer. But, you know, when I was in high school in the 1980s, we had calculators that were all LCD [liquid crystal display] driven, and no worries about batteries or anything like that.

TS: Well, that's great that you've got that.

LC: Yes, I just like history and memories. I've got all sorts of things.

TS: I'll stop the interview at this time then, but thank you very much.

LC: Well, thanks so much, Tom. It's been fun.

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