

KENNESAW STATE UNIVERSITY ORAL HISTORY PROJECT

INTERVIEW WITH ELAINE M. HUBBARD

CONDUCTED BY THOMAS ALLAN SCOTT

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for the

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TS: Elaine, why don't we begin with just a little bit about where you were born, when you were born, and where you grew up.

EH: Okay. I've always lived in Woodstock. I was born in 1950. I've lived in Woodstock all of my life; my dad lived in Woodstock all of his life; and his father [all] of his life. I am very much a native of Cherokee County.

TS: How far back do they go in Cherokee County?

EH: Late 1830's.

TS: Really? So, [to] the very beginning, almost.

EH: Basically the beginning. When the Cherokees were moved out of the county, several branches of my family started to move in.

TS: Right. So you've got roots as far back; that must be six or seven generations back then.

EH: So I guess that's why I tend to be interested in the local history and subjects like that.

TS: Have they always lived in the Woodstock area?

EH: Well, my dad's family has always lived in south Cherokee, and yes, basically the Woodstock area. And my mother's family was from the northern part of the county. Both sides are from Cherokee County, just different ends of the county.

TS: The part that goes back to the 1830's, was that the Hubbard side of the family?

EH: Actually both. Both my mother's family and my father's family.

TS: So both north and south Cherokee.

EH: Part of my mother's family went into Gilmer County but then directly into Cherokee. We have a couple pieces of furniture that they brought from South Carolina on an ox cart—that was my mother's side of the family.

TS: What kind of pieces of furniture?

EH: It's called a wagon chair. It's that ladder-back-type chair, but the legs are short (about this long). It's that high above the ground, and supposedly, when women would ride in the wagon, the chair was low, so they could rest their arm on the edge of the wagon.

TS: When you said that high, for the purposes of the recorder, about a foot and half off the ground?

EH: About that, yes. About a foot and a half off the ground. It makes the chair seem really too low, but when you realize that you didn't want people to be up above the side of the wagon. They would just rest their arm on the side of the wagon. So it was called a wagon chair.

TS: I've never seen one of those before, I don't think.

EH: That's what they always told me it was.

TS: That's great.

EH: I went to elementary school in Woodstock, at Woodstock Elementary; that's where my dad went also.

TS: I did an interview years ago with Bill Booth.

EH: He was principal when I was there, yes. And his father, E.T. Booth, was teacher and principal when my dad was there.

TS: Is that right?

EH: I remember Mr. E.T. Booth would come visit—he was retired, but he would come visit. That was always great fun, when he would come.

TS: Woodstock was a little place back then.

EH: Woodstock was definitely a small town and a nice community.

TS: I remember driving up that way, was it the Dixie Café?

EH: Dixie Inn.

TS: Dixie Inn right there at Highway 92 and 5.

EH: Dixie Inn Restaurant at 92 and 5.

TS: Right.

EH: Ed Mulkey ran that.

TS: He did?

EH: Well, not the Ed Mulkey you know—it was his father.

TS: Really? I didn't know that.

EH: The Ed Mulkey you know is Eddie Mulkey to us, and his father was Ed, and yes, I think he started that restaurant, and ran it for many years.

TS: I didn't know that. Wow.

EH: And they lived on the other corner right across from Dixie Inn.

TS: I didn't know that. That used to be a nice restaurant to go up to. Well, I guess there was only one high school in the county then.

EH: There was just one high school, Cherokee High, so I went to Cherokee High.

TS: So you had to go into Canton to go to high school.

EH: Cherokee High School in Canton, yes.

TS: And you graduated from there in?

EH: '68.

TS: So you had to come straight to Kennesaw Junior College from there, didn't you?

EH: Right.

TS: And I got to Kennesaw in '68; in fact . . .

EH: That's how you know when I came, and I know when you came.

TS: That's right because you were in one of the first classes I taught in Kennesaw.

EH: I was in your history class in fall quarter of that year, my first quarter here.

TS: Right, that was your first quarter, and my first quarter.

EH: That was my first quarter, and I think it was your first.

TS: I cringe that anybody could remember what I was doing back then. I'd just as soon they all forget!

EH: That reminds me of a funny story. They had a retirees' luncheon this spring and [Dr.] Virginia [C.] Hinton was there and—you weren't there, I don't think . . .

TS: Yes, I was there.

EH: Did you hear her comment?

TS: I didn't hear her comment, but I was there.

EH: Okay, her comment was something about when your children get grown, you know you're getting old. When your grandchildren are getting out of high school, you know you're getting old. But when you come back, and you find out your students are retiring, then it's all over.

TS: Well, I don't think I've ever interviewed anybody before that took one of my classes.

EH: Well, you know a lot of people that have taken classes, so you may have done it.

TS: Who knows? At any rate, you came to Kennesaw, and did you stay two years?

EH: Two years, yes.

TS: So you got the associate degree.

EH: Got the associate degree.

TS: Then went to Georgia Tech.

EH: Right. And then in '72 I got a bachelor's degree; '74 a master's; and '80 got my Ph.D. from there.

TS: Did you feel that Kennesaw had prepared you adequately for Georgia Tech?

EH: Yes, I was well prepared.

TS: So your grade point average didn't go down.

EH: No, stayed the same.

TS: Probably a 4.0.

EH: Yes, it stayed about the same.

TS: Was it a big shock going from Kennesaw to Georgia Tech, back then?

EH: No, I didn't perceive it as a shock.

TS: Did you continue to commute from Woodstock, or did you move down there while you were in school?

EH: I commuted most of the time. At the time I went, there were only about 200 women, so there were really very few.

TS: Yes, that was the shock I guess, wasn't it?

EH: In a way, no, because even here in my calculus class, I was usually the only girl.

TS: Yes, we forget, but back then Kennesaw was about two-thirds male, I suppose.

EH: I really don't remember the ratio, but if I was in anything non-traditional, sciences or math, it was primarily males in the class. I was just accustomed to that. I wanted to go to Georgia Tech so much; I had always wanted to go to Tech, and I was so happy to be there that I didn't let anything bother me, even when my parents would get these letters that would say something like, "While your son is at Tech, blah, blah, blah."

TS: So they really said that?

EH: Oh definitely said it. Even my Ph.D., the diploma says, "And confer upon "him" the degree of blah, blah." I finally noticed that a long time after I got the degree though. The diploma was just lying in a drawer, I didn't bother to look at it.

TS: Didn't read every word of it.

EH: A friend stole it, framed it, and gave it to me as a present, and then I saw the word "him". I pulled out my other two degrees, and there was a circle of White-Out over the "im" and they wrote in "er," and changed those two to say "her" instead of "him." But somebody slipped up, and didn't do it for the other one.

TS: So no White-Out on your . . .

EH: No White-Out on my PH D diploma. Just says "confer upon him".

TS: Wow. Things have changed.

EH: When I was in first grade, I told my teacher that I wanted to go to Georgia Tech, and be a mathematician and go to the moon. So, I had always just wanted to go to Tech. I was so happy to be there.

TS: What did they say in the first grade?

EH: I really don't remember her saying anything then.

TS: They humored you.

EH: Yes. They didn't say, "Oh, you can't go because you're a girl." They just really didn't say anything. Maybe they were kind of stunned, because that was a weird thing to want to do. [Mrs. Fowler], my first grade teacher, called me on and off right up until she died, and always reminded me of what I had said.

TS: Something that I had wanted to get into was mentors, and who your mentors were as you were going along that really had an impact on you. It could be elementary school, graduate school, or whatever.

EH: I can't think of any particular mentors I recall in elementary or high school. I was pretty self-motivated and knew what I wanted. I knew what I wanted, and I was just out to get it. I had lots of teachers that I really liked that contributed in a positive way. I guess when I got to Kennesaw, if we want to focus on Kennesaw, there were three people who I feel played a real active part in encouraging me. Horace [W.] Sturgis. It was really strange. The first two or three weeks that I was here, he was in the Student Center, which was this building right up here, who knows what it is now.

TS: Technology Annex.

EH: Well, that was the Student Center, and I was in there one morning when he came in, and we had doughnuts together. He started pushing me to transfer to Tech, or rather to go to Tech, when I finished here.

TS: He pushed you to go?

EH: Encouraged.

TS: Or did you say, "I want to go."

EH: He really brought it up.

TS: He did?

EH: He would say something to the effect, “When you get through here, you should go to Georgia Tech.” And it was almost every week, we had doughnuts, and he was always encouraging me, “Yes, that’s what you need to do is go to Tech.”

TS: Did Dr. Sturgis seek out students to sit down with in the Student Center? Or did ya’ll seek him out?

EH: No, he would have to have been seeking me out because I . . .

TS: You would have never done it.

EH: I was too much the shy, reserved sort. No, no I would have never thought, “Oh, there’s the president over there. I’ll go talk to him.” I wouldn’t have dared gone over there probably.

TS: That’s neat that you’re having doughnuts in the Student Center with the president, though.

EH: But he was just constantly encouraging me to go to Tech. That was the big thing. Now, he did have an ulterior motive because Kennesaw was obviously a very new school at the time, and he was trying to build a reputation. He spent an awful lot of time going to the Kiwanis Club and similar groups and saying, “Oh, we have a student who finished at Kennesaw, and she has gone to Georgia Tech. She has a 4.0 average.” So he was looking at that side of it. In fact, when I was transferring to Tech after my two years here, I went down there, and they were to evaluate the transcript, and I came back and went straight to his office. I said, “Look, they said they’re only going to give me part of the hours I have earned.” I had earned 100 hours here, and they were only going to give me 60. I don’t remember the exact hours but something like that.

TS: So back then, at that point, I guess we didn’t have the Core in place where they had to take that?

EH: Yes, we did but they had said that, “No, we can’t do this; you’ll need to take this and this.” And so I came back and said, “Look.” And he said, “They can’t do that. With the Core curriculum, they have to take it.” So he called somebody in the Registrar’s office down there, and he said, “You go back down there and talk to them.” Well, that time I came back with ten more hours than I had taken here. [chuckle] Yes, I gained. It was either ten or eleven hours that was transferred thanks to his phone call.

TS: Very good.

EH: And then Charley [G.] Dobson, [Jr.]; do you remember him?

TS: Sure do.

EH: Okay, well I had him for physics, and of course he was a Tech graduate. He strongly encouraged [me] also; he teamed up with Dr. Sturgis to encourage me to go to Tech. He was another person who I talked with in the Student Center while having doughnuts. Dr. Sturgis and Charley Dobson were frequently in there eating and they were encouraging me. Charley Dobson was just a really neat teacher. I think a lot of people didn't like him because he tended to just keep going on just a little bit higher level [than they were used to]. I remember the first quarter that I had him for a physics course. He was so excited because it was the first time we had offered calculus-based physics. I had already completed the calculus sequence, but the only thing that was required was that you had one quarter of calculus. Well, about half way through the quarter, he was way past any calculus I had ever had, and by the third quarter of the sequence, he was pulling out things he had done in graduate school, and lecturing from that. I found it interesting, challenging and all that, so I liked it. Some people didn't, as you can imagine.

TS: Yes, if they didn't have the background.

EH: Yes, and that's true, some honestly did not have the background for it.

TS: What I remember Charley for most is one of our early faculty retreats, where Newt Gingrich and another professor from West Georgia were—have you ever heard this story?

EH: No.

TS: Well, they were doing the workshop that we were doing; it was at the 4H camp.

EH: Oh, the 4H camp in Rock Eagle.

TS: Rock Eagle. Well, at any rate, it was the worst thing you could possibly imagine, and maybe it was about the second day, and Charley just stood up in the middle of their presentation and said, "I'm taking over!" And he did! He took over.

EH: You're kidding.

TS: He took over, so Newt and this other guy, Darryl something or other, from West Georgia were pushed to the sidelines.

EH: What happened? They didn't become as famous as Newt did.

TS: No, the other guy didn't, but he was a psychologist or something and I mean, it was absolutely incredibly awful. You know how Gingrich is; he can talk for two days whether he has anything to say or not. Charley got up and took over, said, "I'm taking over," and he did. And the faculty ran the workshop the rest of the way, and Newt and Darryl sat on the sidelines saying, "Well, this is what we

- planned all along, that the faculty should take over.” You can believe that if you want to.
- EH: I bet. I don’t believe any of that.
- TS: At any rate, Charley took over, and I remember the very last day Dr. Beggs had to leave, I think his father was ill, I’ve forgotten exactly what it was, but at any rate Newt was still talking a blue streak, and Dr. Beggs said something like, “I’m leaving, we haven’t done anything worthwhile all day today.” And he left. And Dr. Sturgis was out there in the hall with Dr. Beggs, counseling him on being more tactful. [laughter]
- EH: I can believe that.
- TS: But that was Charley; he took over that meeting, and he exercised leadership. So Dr. Sturgis and Charley Dobson. What about at Georgia Tech? Were there any mentors there?
- EH: Well, actually one more at Kennesaw, Micah [Y.] Chan.
- TS: Oh, Micah Chan.
- EH: Yes, I had him for calculus from day one when I was here. I started calculus after exempting college algebra and trig. He was the one who kept pushing me to stay in mathematics. They were urging me to go to Georgia Tech, but he started almost immediately saying, “You’ve got to get a Ph.D. in math.” And I really honestly never had thought about whether to get advanced degrees in math, I just wanted to major in math, which was all I knew. So he was really the one who just constantly pushed. Even after I left here, he called me frequently, and always encouraged me, “You’ve got to go ahead and get your Ph.D.” So those were the three people here that were particularly influential.
- TS: So it sounds like that what you’re saying is they were influential for what they did outside the classroom, as much as what they did in the classroom.
- EH: Yes, they really were.
- TS: They sound like they were very helpful and encouraging.
- EH: Yes. I guess I was academically inclined enough that I enjoyed all of my classes; it didn’t matter whether it was math or something else; occasionally [I even enjoyed] an English class. Virginia Hinton’s English class was one that I liked. And I liked history—I do like history.
- TS: Well, with your background you couldn’t help but like history.

- EH: I couldn't help but like history, so I enjoyed history [classes]. So what instructors did in the classroom, I enjoyed all of that regardless of the subject. But these three because of what they did outside of class were particularly influential.
- TS: Well, these are the ones that saw your potential in math and encouraged you to go on and, you know, three males, in effect, and they're all saying, "Go for the doctorate." Well, Micah Chan in those days seemed to be wonderful with people, from developmental math all the way through.
- EH: He was. I thought he did a wonderful job teaching those courses.
- TS: I know my wife, Kathy, had to take developmental math, and had Micah Chan. What she admired about him was his patience, and that he would always act as though it was his failing if the class didn't learn something, instead of their failing.
- EH: Yes. He would always try to find more ways to explain things, and he would spend, it seemed, whatever time outside of class it took to help someone understand it. So he was really good.
- TS: Well, you then went on to Georgia Tech; were there any mentors there, a major professor or anybody that stands out?
- EH: There are really quite a few there--people in the math department--that I think helped me a lot and encouraged me a lot. Don Friedlen was one that I liked a lot. Eric Imel was another.
- TS: I guess they were all male faculty members at Tech?
- EH: Oh yes. I don't think there was a female faculty member. . .
- TS: I thought you said Erica—that would have really been something down there.
- EH: No, I don't think there were any female professors. At least, I didn't have any female professors.
- TS: I hate to say it, but back when I was in graduate school, there were absolutely no women in the history department at the University of Tennessee, so they were all white males that were teaching all the way through graduate school.
- EH: Yes, it was all males. Well, certainly at Tech, which was so male-dominated.
- TS: Yes, in the sciences and math.
- EH: In science, math, engineering, it was all males. And I was usually the only female in the class.

TS: Yes.

EH: Jim Herod was another professor that I liked a lot there.

TS: What is it that you liked about these individuals?

EH: Some various things, some of them because they were friends or, yes, I guess you would call it friends outside of the classroom, as well as in. I liked Friedlen and Imel as math professors, because they were total opposite type teachers, and total opposite type mathematicians. I learned two very important sides of mathematics. Don Friedlen came in covered with chalk, from head to toe, and he said, "We're going to try to prove this." He would start working and say, "Well, this doesn't work so now we'll start over." He'd have boards just full of stuff, and then he'd say, "Oh wait, if we take this part from this, and this part from here, and this part from there, we can put it all together into a proof." Well, that's how you really do mathematics; you just start trying things, until you can finally get enough pieces of the puzzle that it works.

TS: But not usually before a classroom of students.

EH: In a way, I found that very helpful because that's really how you have to do math. And then Eric Imel, on the other hand, would come in, and have the most perfectly polished proofs you've ever seen. They were absolutely elegant; every letter that he wrote on the board was exactly the same height. He wrote it in columns that were exactly the same width. It was preparation and polish to the n^{th} degree.

TS: So which model did you follow when you got in the classroom?

EH: For better or worse, [I] tended to be a little bit more of a Don Friedlen.

TS: Really?

EH: Yes. Because I really think that's how you learn mathematics, just by doing that kind of experimenting. It's really pretty to see the final finished product. I guess I always tried to do a little bit of both; I wanted to say to students, "Okay, we've put together all this stuff, and now let's put together the finished product." I would lead students through the experimenting and then present a polished and logical solution. I guess I tend to be a little more of a Don Friedlen with Eric Imel's polish at the end.

TS: That's interesting because the way I remember you, as a student, is that you would know everything, and you'd have it backwards and forwards in a very organized fashion.

EH: Well, yes, and I'm that going into the classroom, but that's not necessarily the way I presented it. I would say, "Well, let's try this; oh, this doesn't work, let's try another approach." I knew ahead of time a method wasn't going to work, but I think you learn a lot, especially in mathematics, seeing what things don't work and why they don't work.

TS: I see. And then ask the class to figure out what to do?

EH: What to do or, if a method didn't work, ask students to suggest a way to go about it. I may know absolutely where it's going to lead, but I would just keep going with it. I'm sure that's what Don Friedlen did. He was an outstanding mathematician, but I think he was just showing how people really did the background work for mathematics. At one time, Tech published student evaluations of professors, and one written about Don Friedlen said that his classroom was organized chaos. And that's right; I think he had it totally planned, but just on the surface it looked chaotic. When I say I followed his mold, it was—I knew what I was doing; I knew when I was going down the wrong pathway, but most students are not going to be able to sit down and do a problem from start to finish, just absolutely perfectly. You do things that do not work, and then you try something else, and see if that works. That's what I wanted students to see.

TS: Right. Now, you finished your master's in '74, came to Kennesaw in '75. That means you had a year beyond the master's, and then got your doctorate five years later. So you were teaching full time at Kennesaw.

EH: Right. I hadn't quite finished the coursework. So my first year here, I was still finishing the coursework. I think it was just one more year of coursework, and then I was doing the dissertation.

TS: So you didn't take any leaves of absence?

EH: The only leave of absence I took from here was right after I got my Ph.D., and I took a one-year leave to go to the University of Delaware. One of my major professors was at the University of Delaware, by that time, and he arranged for me to go up there, and do post-doctoral work. I was there for one year. I guess it was '81-'82.

TS: Okay. So, basically, you got through pretty fast when you consider you're teaching full time here, and trying to do a dissertation.

EH: Yes, I think so.

TS: What did you do your dissertation on?

EH: Let me think. The Frank Wolfe Algorithm Applied to Optimization in Infinite Dimensional Vector Spaces.

TS: Okay. I didn't understand a word of that. Maybe logarithm. [chuckle]

EH: Algorithm.

TS: And what does that mean?

EH: Well, optimization is a branch of mathematics that seeks the best or optimal solution to a problem that has multiple solutions, and infinite dimensional vector space is a fancy way of saying an infinite number of variables.

TS: Infinite, okay.

EH: Infinite, yes, as opposed to finite.

TS: Yes, okay. So once you had come up with this dissertation, you had solved the problems of the universe. [chuckle]

EH: Something like that, yes. My thesis advisor at Tech was from Syria. He had been into optimization in infinite dimensions for a long time. There were a couple of mathematicians in Russia working on it, and there was one in India, I think, who was working on this little particular phase of mathematics.

TS: So you were doing all of this while you were trying to teach algebra to freshmen?

EH: Exactly, yes!

TS: So a little bit different I guess between . . .

EH: Yes, it was different.

TS: Gave you something to keep your mind alert, I guess.

EH: Both ways. Both were challenges.

TS: But then, when you went on for your post-doctoral work at the University of Delaware, was it in the same field?

EH: It was just a continuation of the research I had done for the dissertation, yes.

TS: Did you continue in that field afterwards?

EH: A little but it was really not feasible, once I got back here, and had the heavy teaching load. There were committees and just stuff that took my time—and Kennesaw was not in a position to really sponsor or encourage that kind of research because that's a much more esoteric type research than even now we

- would see as our mission. So at that time, [Kennesaw] was still a junior college—I guess by '80, it was not.
- TS: Not by '80; '78 was when we started junior and senior classes.
- EH: But we were still in the infancy of our four-year—we were certainly not a university mentality by any means.
- TS: No, we didn't have that many upper level classes.
- EH: No, and there was just not really the support for doing that. So, I just moved on to other things.
- TS: Maybe as a follow up, was Kennesaw the kind of place that you wanted to be? Did you get any encouragement to go to a major research institution after you finished your doctorate, and particularly after that year at the University of Delaware?
- EH: Yes, I think that was one reason my dissertation advisor arranged that year at Delaware; he was trying to get me to stay in research and do more research.
- TS: In that field? Why did you decide to go the route that you went?
- EH: I don't know. It was just kind of one of those things that evolved. I'm not sure I really made a decision to say, "Okay, I want to go back to Kennesaw, stay for twenty years, and teach there." It just kind of happened. And actually partly the fact that family and roots were in this area would pull me back to this area. And maybe, at the time I was just about too burned out on the research, and I needed a little bit of a rest. It turned out to be a longer rest than I had really intended it to be.
- TS: Did you see a potential for Kennesaw to become more research oriented at that time?
- EH: No, I really didn't, because at that time it was a long way from even supporting what we refer to as applied research. But really research—I didn't see that coming any time in the near future.
- TS: Did you do any teaching at Georgia Tech?
- EH: As a graduate student I did.
- TS: What?
- EH: Calculus. When I started working on my master's degree, I immediately became a graduate teaching assistant. I think, now they are truly used as assistants. What

they did then, they handed you the class roll, and told you the room number. You [then] went off, and taught the course. I remember the very first class I taught. You just said you always remember me as being very prepared. Well, I was very prepared because I had never taught in my life. I was so prepared for that class. I had even rehearsed my lecture. I got in the classroom, I looked at that roomful of students, I got so scared I couldn't even call roll. I dismissed class, and left! So the second day, I decided, "Well, I have to teach this class, so I'll just have to suck it up and do it." But the first day I got so scared I couldn't teach.

TS: But no support system?

EH: You were officially assigned a faculty member, and you were supposed to take your tests by to have them approved. I think that was to keep somebody from really going off the deep end. Bert Drucker was the faculty member. He was next-door neighbor to Mary Lou Fish; do you remember Mary Lou Fish?

TS: Yes.

EH: And he lived next door to her. He was really a nice fellow; I enjoyed him.

TS: Did he ever know that you couldn't call the roll the first time?

EH: I don't think I ever told him; well, I may have, I think I may have at some time because I just enjoyed going by and chatting with him sometimes. I probably told him that. But I took my first test by, and he kind of halfway looked at it and said, "That's fine." After about the second test, he said, "You don't need to keep bringing these by; don't worry about it."

TS: So you taught calculus before you came to teach at Kennesaw?

EH: Oh yes. I taught calculus for about three years down there.

TS: So you came to Kennesaw, and what were you teaching here when you started? Did you have to do the developmental math?

EH: Well, there's so much of that; I honestly don't remember what I taught the first quarter. Virtually everything I taught was the developmental math, college algebra, trig, and a little calculus. But that's where the demand still is, the lower level math courses. That's certainly where the major portion of the teaching was.

TS: To people that really don't want to be there in many cases.

EH: That's right, in most cases.

TS: Get all those history majors!

EH: Get all those history majors, that's right, the music majors, history majors. At Tech, the only ones you got in that category were architecture majors. They were the ones you got who were not particularly mathematically inclined; they're a bit of the artist, and they would really struggle through calculus. I can remember them coming to see me and saying, "This is the last quarter of math I have to take; just please let me pass! I'll never take any math again." I heard that type story many times. But here, yes, it was mostly the developmental math and college algebra.

TS: Well, as best I can recall back then, there must have been [that] about a third of our students were in developmental courses.

EH: Oh I'm sure at least that many were. At that time the developmental courses weren't separate from the math department; they were part of the math department. So a big part of our teaching load was those courses. I imagine I taught those the first quarter I was here.

TS: When did you first discover that you liked to teach?

EH: You know what, I don't think I ever discovered I like to teach. In a lot of ways, I never did think I liked it.

TS: Really?

EH: Not too many years ago Ron Robinson [Dr. Ronald D. Robinson] was always aggravated with all the things that were going on here, all the committees, and stuff like that. He frequently said, "I don't want to do that; I just want to teach my classes." One day he was really aggravated and he said, "Well, just think about it; what is it you like the least about your job?" And I said, "Other than teaching?" He was startled but I continued, "Well, that's what I like least of my job."

TS: That's interesting that you did it so long and won a Distinguished Teaching Award.

EH: And, I never really thought I particularly enjoyed teaching. Maybe I enjoyed it more than I think; I liked mathematics, and I liked doing mathematics. When I was in class and students would say—on evaluations they were always saying things like, "She just loves to teach; you can just tell how much she likes to teach." And I always thought, I must be a good actress if they thought that I liked to teach. But now I believe that what they saw was that I enjoying doing mathematics, and they were seeing me do mathematics. My teaching consisted of my doing mathematics, and students seeing that I enjoy mathematics. So maybe that is teaching. Maybe, I did like it better than I thought! I always separated the two things (teaching math and doing math) in my mind.

TS: But you didn't really need the audience there to enjoy what you were doing.

EH: No.

TS: That's interesting. One of the things that I wanted to get into, we're asking everybody to give us what their definition is of a master teacher. What's your particular definition or whom would you describe as master teachers, perhaps?

EH: Well, I think you're a master teacher because you always seem to go into class with energy for what you teach and knowing the subject matter.

TS: I tell you, those classes that you took from me, you wouldn't believe how little I knew of Western Civilization!

EH: Well, you fooled me. I knew less, and I thought you knew a lot! I think about the teachers that I had, and the core qualities that I saw were that they share or impart on you their love for the subject matter.

TS: Which is what you did in the classroom.

EH: Which is what I did. Otherwise, I guess I always thought, "What you learn is not because of who your teacher is; it's what you do outside of class." So maybe that's another reason I thought I didn't enjoy teaching. I didn't think it was a very important task because, I thought if you learn something, it's what you do, not what your teacher's doing. I probably thought that because I don't know how many times my dad would say to me, "It doesn't matter who your teacher is; the teacher's not important. It's what you do."

TS: So what the teacher does is . . .

EH: For me, a teacher was there to answer questions. If I was stuck on something, then I wanted to run by their office and have them answer a question.

TS: Right, but they can also give you a task.

EH: They can steer you towards interesting problems to work out, yes. The day-to-day standing there and lecturing, I always thought was probably a waste of time!

TS: Yes, we're all victims of that.

EH: From students' comments I would get, at least for developmental students, I think that's probably not the case [that day-to-day standing in front of the class is a waste of time]. Because so many of them lack the study skills, background, and the confidence to just be able to sit down and work through it totally on their own, they need instruction. Especially in math, they've had so little success at mathematics that they're even afraid to start. In teaching those courses, if I was worth anything at all to the students, it was just trying to tell them that they could learn it, that it was something that they could do.

TS: Right. How did you steer toward the working with the developmental students? We called it developmental studies back then, I guess.

EH: It's been called so many things. I don't remember which thing it was when I actually began teaching those courses. . .

TS: But you did go from the department of mathematics to whatever we called it, developmental studies?

EH: Yes, it became a developmental studies department separate from the math department. I simply moved into that department. Although we still had what was called a joint appointment at that time. That meant that I taught some math department courses as well as some developmental courses. It's only really in recent years that it's become almost so totally separate. There's just almost no crossover now, and I frankly kind of think that's too bad.

TS: Who was the chair of the department in developmental studies at that time?

EH: I think Morgan [L.] Stapleton.

TS: Was Morgan still here then?

EH: I think he was still doing that but not for very long. He moved on. I guess he went to Brunswick.

TS: Brunswick College [Coastal Georgia Community College], yes, he became a dean down there.

EH: And Mary Zogby took over then, so I was with Morgan Stapleton a very, very short time, if at all; I just can't remember for sure whether he was still head of that or not.

TS: So Morgan was a mathematician.

EH: Yes, he was in the math department when I came as a student.

TS: And then Mary was, of course, from English, and took over.

EH: She had taken over that, and I'm not sure how or why she moved into that, but she chaired a department that included reading, English, and math developmental studies courses. She stayed in that position for quite some time.

TS: Did you enjoy working with developmental students?

EH: Yes, I did.

- TS: It must have been difficult because, as you were saying earlier, many of them had a lack of confidence about mathematics.
- EH: Well, but that's really what I did was kind of focus on convincing them that they could do that. And I've said this a lot of times to a lot of people: In many ways it was more pleasant teaching a developmental math course than college algebra. That's because in college algebra you had to teach it as if the students had a background, and they didn't. In developmental studies, you could start with the very, very basic material. You could just start teaching, so you had some hopes of accomplishing something. But if I was teaching a college algebra course, and the students had a background that was so far below what was needed, I was teaching to the third of the class that had the background, and the other two-thirds were just falling by the wayside. Or I could teach toward the lower-end of the class and save them, but then I'd have the upper-half of the class bored to tears. So I just really hated teaching that course; it was just so frustrating. So that's why I decided I really liked developmental studies better.
- TS: Was it particularly the algebra course, Math 1105, [in] which you would find such a lack of preparation or was it true in the calculus class?
- EH: The college algebra course was the worst because in the calculus class students had generally been through either college algebra or trig, or they had been through pre-calculus. They had gotten some kind of background or found out they didn't have the kind of background they needed to go to calculus. So there was some sort of screening process. But at that time, everyone took college algebra. You had the music major, the history major, the nurses, anybody.
- TS: I remember about that time, sometime in the late '70s or early '80s, it seems like about half of the students who were taking college algebra were flunking the class.
- EH: Oh easily, maybe more. But that was why; they didn't have the background to be able to do that class.
- TS: Why was that? I remember, when I went to college, they put me in a calculus class the first semester.
- EH: But in high school you probably took a college prep track.
- TS: Yes, we did, and had a real good teacher.
- EH: Especially at that time, I think a lot of the students we got at Kennesaw were not the ones who had really taken the college prep track.
- TS: So they didn't have any algebra in high school?

- EH: Sometimes none, or at least very little.
- TS: But didn't we have a placement test that determined who went to developmental, and who went to algebra?
- EH: Sometimes we had a placement test, and sometimes we didn't. Those were kind of on and off, whether we had them, and how effective those tests were was highly questionable. And there was another problem; in those early days, we only had one developmental math course, and you had to take the students from the lowest level--they didn't know how to add and subtract, signed numbers--all the way up to college algebra level in one quarter—not semester but a quarter—and that was an impossible task. You had to fly through the material, and whomever you could get ready you got ready. A lot of them, I couldn't get ready for college algebra in one quarter. One thing I spent a lot of time doing was lobbying for that second course in developmental math.
- TS: The 098?
- EH: Which we finally got. That helped us; it gave us enough time to have some chance of getting students ready for the college algebra course. And it was quite a fight to get that second course. Having more remedial courses was not politically correct. There were a lot of people fighting that.
- TS: It seems like I remember the math department being in almost open revolt against the administration over pressures to pass people.
- EH: The math department has been in open revolt, in various degrees, against the administration for the entire thirty years I've been here. But, yes, they've always perceived, and frankly I think correctly so a lot of time, that the administration was wanting the math watered down, watered down, watered down, and just couldn't understand why students could come out of high school with no math, and not pass college algebra.
- TS: Well, you know, I never did understand that either; I mean, it seems to me that algebra is about as basic as you could get.
- EH: But college algebra, of course, assumes you know some algebra. Many of our students either had no algebra in high school or they only took a limited amount of algebra. If they took the limited amount their freshman and sophomore year and then they hadn't had any math at all for two years, they were just lost. There was just no way they could survive that course.
- TS: So it's really a problem with the high schools letting people do that, I suppose, and maybe a problem with us for letting them in.

- EH: For letting them in. It's both. I hate to put too much blame on the high schools. There were a lot of other students, that when they're in high school they had no plans to go to college, so they're in this general track or whatever the high schools call it.
- TS: Yes, I guess that's just something I can't comprehend because there was never any question that I was going to college.
- EH: Well, and me too. I was in the college track. But there were plenty of students in my high school who were not really planning college. [They] were receiving no encouragement to go to college from family or school or anywhere else; they were just in this general track. [To them], it was going to be a real accomplishment just to get through high school.
- TS: And particularly when we were a junior college, it was our mission to take anybody that wanted to show up.
- EH: Exactly. And that's what we were doing, but then I kept feeling that, if we were going to take everyone, we needed to provide courses that gave him or her some hope to succeed. Because when a student looked at me and said, "When I get through this course, will I be ready for Math 101?"—which was college algebra—and I finally looked at them said, "No, you won't be." I could not just stand there and say, "Yes, you will be," when I knew we were not able to give them enough in that one course to get them ready.
- TS: So about when was it when we started the Math 098? Is that after Betty Siegel got here?
- EH: It probably was. Probably '80 to '85 would be my guess. [It first appears in the 1983-84 catalog].
- TS: Once you got to Kennesaw, research is on the back burner, at least what we used to think of as research was on the back burner. You were teaching, serving on committees, and doing community stuff—teaching and service.
- EH: Teaching and service were primarily what I was doing, yes; I was on every committee.
- TS: And primarily [that's] what everybody did back then.
- EH: That's right.
- TS: So you were . . .
- EH: I was just like everybody else; that's what we did. We taught a fairly heavy teaching load, and then [sat] on every committee on earth.

TS: And on more committees than were healthy for anybody.

EH: True. And at various times, I think I was on every major committee around here, and a whole lot of not so major ones.

TS: When did you start writing textbooks?

EH: 1992.

TS: '92? I don't remember Ron Robinson. He was on the faculty here?

EH: Yes he was. He was in the math department for about a year, and then he moved over into developmental studies, learning support.

TS: Oh, okay. How long did he stay here?

EH: About eight years. Something like that. He's from Cleveland, Ohio. He had retired from a private high school, elite private high school there--he was head master. His wife was working for Hewlett Packard here in Atlanta, and that's why they moved down here. He just went around job hunting to have something to do. I think he was at Southern Tech for a year, and then came over here. We actually started the books because graphing calculators had come on the market, and we were both seeing what we thought were some positive pedagogical tools that the calculator could offer us. We were doing various things in class, trying to teach with graphing calculators to help us explain the mathematics. One day, he was standing in the door and he said, "You know, we ought to write a book." So I said, "Okay, let's do." And we wrote a couple of sample chapters, shipped it off to five or six publishers, and got some interest in it. That's how it all came about. But it was because of what we were doing in the classroom, trying to use technology to teach mathematics. We were doing what was at the time some extremely new and innovative ways to teach developmental math. Using technology, especially in those lower level courses, was just absolutely not being done anywhere.

TS: Yes, doesn't everybody have to buy a graphing calculator, something like \$90.00, for that course at that time?

EH: Yes. And of course the way we sold that idea was they were going to be required to have a calculator when they got to their credit math course. It was not an expenditure they weren't going to have to make sometime; this way they just used it over three or four courses instead of one. And one of the pluses was, in the credit level math course, the people teaching those courses assumed the student knew how to operate the calculator. If they could learn how to use the calculator along the way, as they were learning the mathematics, then that would also give them a little bit of a head start. We never let the calculator do the mathematics. We used it to enhance learning the mathematics.

TS: So your first textbook was really for the developmental math class?

EH: Oh yes. Definitely.

TS: You've done a whole lot of textbooks now, haven't you? Have you done it for all levels?

EH: Well, pre-algebra through college algebra.

TS: But they're all college geared.

EH: They're all college geared, yes.

TS: So you haven't gotten into the high school market, have you?

EH: No, no, no. No plans to get into that.

TS: Really?

EH: No.

TS: I'd think that could be a lucrative market.

EH: It is, but it's also a tough one to break into, and you almost have to have a team of writers that you're employing to tailor your book to every state's standards. Texas says, "We want a book that has this, this and this," so books almost have to be written for them. I just really don't have any interest in that kind of nit-picky stuff; I've enjoyed the mathematics, and figuring out how to present the mathematics that goes into the book. But just catering to a particular state's guidelines, just doesn't even sound interesting.

TS: Well, I know there's been a lot of controversy in history, and I guess the social sciences over this. I guess in Texas, [whether] they have a school board for the whole state or something like that, and so it's very, very powerful.

EH: Right. It's the same that governs your math. Texas and California apparently govern how all the high school textbooks are written in the country.

TS: Well, what I was going to say is that they oftentimes water down the textbooks to where they have no content just so that they don't upset some powerful interest group.

EH: Right. And that's just one I'm not interested in.

TS: So you stuck to the college market.

EH: I stuck to the college market. That can be crazy enough sometimes.

TS: Yes.

EH: I've run into some really crazy situations; we don't know how lucky we are at Kennesaw. I'm always telling the people in the department with me in developmental studies that every time I went to some of these other schools, and saw what kind of program they had, and sometimes what kind of faculty they had, that I came back thinking, "We are so lucky here to have the kind of faculty and program that we've had in the developmental math unit."

TS: Right. People with Ph.D.'s?

EH: Well, people who at least knew some mathematics. Not necessarily Ph.D.'s.

TS: People were teaching developmental math that don't know mathematics?

EH: Believe me, I've been to those. I went to one community college in Lansing, Michigan. They were employing almost entirely part-time faculty to teach these courses. To cut expenses, they only wanted to pay them by the hour, for the hour they were in the classroom; therefore, you could not expect them to prepare for class because then you'd have to pay them for it. So they prepared a script for them to read. Someone would meet the part-time instructor at the classroom door and give them the day's script. They didn't want the part-time faculty to have the script ahead of time because then they'd have to pay them to prepare. As a part-time faculty, you were met at the door with a script for today; you went in the class, and read the script. That's not teaching.

TS: No.

EH: Not even close.

TS: No, no.

EH: So that was the kind of thing I would see and think, "If Kennesaw ever stoops to something that low . . ." See, you didn't even have to know any math because all you had to do was go in and read the script. And I'm not kidding, that's exactly what they did.

TS: You don't even need a teacher; you can just put it on a screen, and let them read it for themselves.

EH: Yes. And there are several other places I went with horror stories that just left me thinking, we are so lucky here to have the kind of faculty we have.

TS: Well, how many textbooks have you written now?

EH: Well, counting the various editions, I'd say about 13. But two or three of them are in the first edition now. We've got two or three that are in a third edition, and one that's about to go in a fourth edition.

TS: Right. When you started writing textbooks, you kind of cut back on committee load, didn't you?

EH: Yes. I had to, absolutely had to.

TS: There's only so much time in the day.

EH: Yes, and writing a textbook is extremely time-consuming. Well, you've written a couple of books. It takes some time, doesn't it?

TS: It takes some time.

EH: A lot of time.

TS: Well, you have to know your math, and you have to write well too, or clearly.

EH: You have to do both. With a textbook they send it in to reviewers, and the reviewers send back all kinds of comments. Some are worth using and some are not, but you have to sort through them. It's write and re-write, and write and re-write. Then comes the copy editor's comments. It's extremely time-consuming. And with math, you have to prepare all the things like the art manuscripts and every single graph . . .

TS: You had to do it?

EH: Well, you prepare the manuscript to tell them what kind of art you want rendered; somebody rendered the artwork. I didn't have to have camera-ready artwork. But if you want a particular graph of an equation, you have to specify what it is, what scale you want it done too, because if you're using it for pedagogical reasons it can't be just any old picture they generate. It's got to be the one that illustrates what your point is in the sentence that accompanies that. The sentence that says, "See figure humpty-hump," the figure has to have something to do with that. To write down the details of everything this artist has to actually render is really quite time-consuming. And then for a math book, you have to do the answer manuscripts to have answers to all the exercises and so forth. It's mountains of paperwork.

TS: How supportive was Kennesaw when you started doing this?

EH: Well, fairly supportive.

TS: Did you get credit as applied research for doing this?

EH: Not really.

TS: How was Kennesaw supportive then?

EH: Well, they were supportive in that they arranged my schedule at my request to teach mostly evening classes, and that way I could have a bigger block of hours to work on the books. Then as it turned out, I decided I really liked teaching in the evening a lot because I liked the students. Also by not doing as much committee work, I didn't have to be here during the day. I got out of some of the politics. They were supportive in arranging the schedule in that way.

TS: Were you full professor by '92, when all this started?

EH: I don't remember the exact dates on that. [It was 1995]. But yes, I'd made it to full professor about that time, so I didn't have to worry about jumping through hoops I didn't want to jump through, which is really nice. I said yes to things I wanted to do, and I said yes to committees I wanted to be on. But the ones I just really didn't like, I just said no.

TS: But you're really saying Kennesaw was supportive in some ways, when it came to scheduling and so on, but nobody was wildly enthusiastic that you were actually writing books.

EH: No, I never perceived that anybody was particularly excited.

TS: It wasn't what developmental studies was all about from that respect?

EH: No, no.

TS: Even though you're really doing this for developmental studies students.

EH: Right. But no, I never got the feeling that Kennesaw particularly viewed it as being any plus, as far as research or scholarship or whatever. At least developing the pedagogical ideas that went into the books was very much of a research activity. But no, I don't think it was ever really perceived that way very much on campus.

TS: Have you seen, or how has Kennesaw changed over the years, would you say?

EH: Well, it's grown! The obvious changes . . .

TS: I guess I was thinking more in terms of the intellectual climate. Has it changed over the years?

EH: Well, yes, certainly. There certainly is more of an emphasis on various types of research or presentations, publication activities like that. There was essentially

none initially. With a junior college, when I came, there wouldn't have been any. But yes, certainly in that way, there's much more.

TS: Were you feeling pressures to do presentations and papers and so on?

EH: Well, I had done a lot of that in the few years leading up to the time I became a full professor, and a lot of the presentations I had done in the last two or three years before we started writing books were things on how I was teaching developmental math with calculators. I was doing a lot of presentations on that, and I felt pressure to do the presentations and similar activities as I was coming up for full-professor. For better or worse, once I got full-professor, I decided I wasn't going to feel much pressure for anything; I was going to teach classes that I wanted to. I was going to be on committees I wanted to be on; I was going to work on books. I didn't perceive I was slacking off or coasting into retirement. I didn't perceive it that way, but I wasn't going to jump through hoops when I didn't have to.

TS: Well, I would think that those books were a major factor in getting the Distinguished Teaching Award, weren't they? The fact that you are writing books?

EH: I think so. I think that committee saw them as a plus towards that. I think that committee did look at the books as a major factor.

TS: But not necessarily department chairs and so forth.

EH: Department chairs and so forth, I don't think they did, no.

TS: You already referred to some of the technological changes in teaching with the graphing calculators and computerization and so on; could you say a little bit more about how the teaching of math has changed with the use of technology in the classroom?

EH: At the developmental math level, if nothing else, it has let students literally see mathematics, to visualize mathematics in a different way. They are able to see from a graphical side what's going on with things that traditionally have just been symbol manipulation. To a certain extent, at that level, it's also let students attack problems that are a little bit more real world. Although, you really can't do significant real world problems with developmental math. But it lets students start to get a little bit of a feel for where math could be used. And as students move up into some of the credit level courses, even the lower level credit level courses, they really can start to tackle more real-world problems because of having the technology to help. Without technology, the arithmetic associated with the application is just too tedious. But my real excitement with the technology has been from the teaching side of it, of how it's helped me teach mathematics in a completely different way.

- TS: Explain that.
- EH: To a non-mathematician. [chuckle] Okay, suppose we were solving an equation. I'm sure the way you learned to solve an equation when you took algebra, was symbol manipulation. For instance to solve $3x - 1 = 7x + 2$, you add and subtract quantities to both sides, and eventually you have $x = 9$ or whatever the solution is. It's strictly symbol manipulation. Well, by using technology, and producing graphs, you can see how the expression on one side of the equation takes on many, many values. You can see how the expression on the other takes on many, many values. The solution of the equation is where they take on the same value. So you can kind of see by graphing that the graphs intersect. That's the solution of the equation. It's the same result that you would find by the symbol manipulation method. But this way, you have a visual interpretation of the solution: it's the intersection of graphs. That's one way that I see it giving people a different way to visualize what's going on, instead of just having that abstract symbol manipulation that they've always done.
- TS: That makes sense. You mentioned real-world problems, and I know our math department is famous for moving into earth algebra, which was an attempt at dealing with real-world problems in the environment; were you involved in that at all?
- EH: Not really, no. I taught earth algebra once or twice when it was very much in its developing stage; sort of a field-testing situation. But, no, I was really not involved in that at all.
- TS: Were you supportive of that concept or not so supportive?
- EH: I thought they had an interesting idea
- TS: It's not the way you wanted to go?
- EH: It was not really the way I wanted to try to teach my courses. It just didn't fit my teaching style. Everyone teaches a little bit differently, and to do all kinds of little group things just wasn't what I was comfortable with.
- TS: Right. So you didn't go that way.
- EH: I didn't go that route. Our books take a different route, a different approach to teaching math.
- TS: Let's talk a little bit about some of the service things because one of the things I wanted to ask you about is that you got really involved with the Alumni Association at Kennesaw. You were president one year.
- EH: I think I was president, actually, two times.

TS: Two times? So that must have been one of the things that you were willing to commit some time to.

EH: Yes. And I enjoyed it. They were just trying to start an alumni association and they recruited me and a few others who were around and handy to try to start the Alumni Association. I worked quite a bit in the very early years of that.

TS: Any major accomplishment from those years that stand out?

EH: I guess the major accomplishment was merely getting an Alumni Association established. Considering this was the late '70s, so KSU was just barely old enough to have alumni.

TS: Was it [James D.] Spec Landrum at that time? Or even before Spec?

EH: I think it was before Spec; no, I'm sure it was, I'm sure it was before him. So we're talking about establishing an alumni association when the oldest alums had only been out ten years. Well, no, classes started in '66. '68 were the first graduates.

TS: There were five graduates in Spring of '67 that were transfer students.

EH: Yes, so we had graduates who were only out six or seven years.

TS: Not going to be very affluent yet.

EH: No, they're not going to be affluent, and not really to the stage of having interest in alumni associations. So just the fact that we managed to establish one, get it started, and nurse it along until it could get going much better as it is now was an accomplishment. We didn't do anything like building any buildings, and name it the alumni building or whatever; we just hobbled along.

TS: They've got one down the street now [on Frey Lake Road several doors away from the CIE/CETL House].

EH: Yes. It's a very nice place.

TS: Is it? I haven't been inside it.

EH: Apparently it's the same floor plan that this is. I guess all these houses may have had the same floor plan.

TS: The only ones I've been in look pretty similar.

EH: Okay. The one that the alumni have is exactly this floor plan. But it looks very nice, and I'm glad to see that they managed to get that.

TS: Are you still involved with the Alumni Association?

EH: Oh, a little bit.

TS: Not like it was back then?

EH: No. I'm just a member.

TS: Yes. Well, what year was it that you retired? Was it last year?

EH: November 1.

TS: Of this year? Of 2003?

EH: Of 2003 so I haven't been retired a year yet. I had 30.004 years. My time teaching plus my sick leave added up to 30.004 on November 1 so I said, "Okay, I'm moving, and doing something else."

TS: So what is the something else that you're going on to?

EH: Well, right this minute I'm teaching again! For about the last month, I've been teaching poll-worker training courses for Cherokee County. So I'm teaching, but it's something totally different. I'm still working on books. I wanted to travel at the times I wanted to travel rather than just the times between semesters. And also, another factor that prodded me to go ahead and retire was teaching and doing textbooks is so time-consuming. I wanted to continue with books. I was just tired of two full-time jobs. I also had some family responsibilities that were taking up a lot of time, too.

TS: So you really felt like you were doing two full-time jobs, teaching your classes and writing books?

EH: Oh, yes, very much, yes. Ten years of doing that was [a] long enough [time] to do two full-time jobs.

TS: Well, I'm just about at the end of my questions, I guess. Any last words of wisdom that you want to add to the tape?

EH: I'm afraid I got all my words of wisdom put together in that one commencement speech.

TS: Well, that's right, you got to do a commencement speech.

EH: I got to do a commencement speech.

TS: Was that fun? Or scary?

EH: It was all of those. It was really scary, and then, finally, when I decided on something I could halfway talk about and feel comfortable with, it was kind of fun. I don't want to do it too often but that was all the words of wisdom I could ever muster in my whole life, I think.

TS: Well, tell us what you told the graduates.

EH: Well, the commencement address, I said it could be subtitled "A mathematical approach to life." So I found five quotes from mathematicians that I thought had some implication for everyday life as well as mathematics. I expounded briefly on each one. I hope you're not going to ask me for a quote because I'm not sure I can think about what they were right now.

TS: Oh no, no.

EH: But one of them was to be a problem solver. There was a quote about being a problem solver, and that was where I told my little story that I found a problem, and stuck with it, and worked at it. My problem was I didn't have a window in my office, and I stuck with it until I got a window. So with my five quotes, I had a couple of little stories that were just little funny stories like that one, and then a couple of stories that were serious. I kept it short which I'm sure the graduates appreciated.

TS: And the faculty I'm sure appreciated it too.

EH: And the parents and everyone else. I think it came in at about twelve minutes.

TS: Our graduations have gotten longer and longer it seems.

EH: That's probably a success for a speech, if you hold it down to a reasonable length.

TS: I had to do one of those speeches once, when they were—I forgot why—maybe it was when we were doing three graduations in the gym. I think the biggest shock for me was that you couldn't have eye contact with the audience when you were up there, and I can't teach without eye contact.

EH: And that's what you do, in a classroom; you make eye contact.

TS: So you don't know what the response is to what you're saying.

EH: No, you just have to talk to the masses. When I was first doing this, my first reaction was that I was just scared to death, and I really shouldn't do this at all. Friends who don't teach will say, "But you teach. There's no difference. You're standing up in front of people talking." But people who have taught said, "Oh no, it's totally different." And that eye contact—when you teach you're standing up

there explaining something and there's give and take. For a commencement address you're just talking.

TS: There's just give. Right.

EH: And they're probably not listening.

TS: Have you seen a major change in students over the last thirty years or so or are they pretty much the same today, do you think?

EH: You know, they're probably different, but it's been a gradual enough change that I really don't think about it too much as change.

TS: Yes, I agree.

EH: Yes, I just don't really see that much of a change. If I could take one from thirty years ago, and one from now, I would probably say, "Oh, yes, this is a pretty big change."

TS: Well, it might be a shock to go back to those classrooms, but I don't think it would really. I mean, I know we've raised admission standards along the way, but we had some pretty good students back then, too.

EH: Yes, and we had some not-so-good ones. And we've got some good ones now and some not-so good ones. So, I don't perceive any great change.

TS: Yes, yes. Well, I appreciate you coming back on campus today.

EH: Well, thank you. It was fun talking with you.

TS: I enjoyed it too.

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