

Computing Educators Oral History Project

An Interview with *Andrea Lawrence*

Conducted Tuesday, 6 November 2007

At Bellevue, Washington, USA

Interview Conducted by Barbara Boucher Owens

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We recommend that this oral history be cited as follows:

Andrea Lawrence, an oral history conducted in 2007 by Barbara Boucher Owens, Computing Educators Oral History Project. Online: ceohp.org.

[Context for the interview: To be filled in]

1 [0:00]

2 **Barbara Boucher Owens:** This is an interview with Andrea Lawrence from Spelman College
3 conducted by Barbara Boucher Owens. This interview is being recorded on the 6th of November,
4 2007, at Bellevue, Washington, USA. It's part of the Computing Educators Oral History Project.
5 Did we give and pronounce your name correctly?

6
7 Andrea Lawrence: Yes, you did.

8
9 **B:** Good. All right! We're going to start way back when?

10
11 A: Okay.

12
13 **B:** All right? Now did your parents have college degrees?

14
15 A: Yes, they did. In fact, my parents finished college after I was born. My dad was on the Veterans' Bill after
16 World War II. So we all went to college together. Only I went to nursery school.

17
18 **B:** [laughs] Well, were either of your parents in computing related fields, such as mathematics, science,
19 or engineering?

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- 20
21 A: No, my mom was an English major, and my dad started out to be a doctor in biology and ended up as a
22 teacher, so ended up in psychology.
23
24 **B: OK. Were you a good student?**
25
26 A: Oh, I was a great student. I almost had to be! My mother was working at Spelman College by the time I
27 got old enough to really worry about grades, and she wasn't going to stand for me having anything less
28 than As. So I knew not to bring home anything that didn't look like that.
29
30 **B: Did you take courses in math and science that prepared you for college and your study of math,**
31 **science, or computing?**
32
33 A: I really just took the standard courses, nothing special. I went to a small school that was largely a
34 boarding school. I was a day student. And there really wasn't a lot of choice. I took as much math as we
35 had, which wasn't much. I didn't get past geometry. So when I got to college, my decision to major in
36 math was not predicated on that. It's just that I had always liked math.
37
38 **B: Tell us a little bit more about this boarding school that you went to. Were the teachers taking a**
39 **good interest in you and make you feel confident? Tell us a little bit about that.**
40
41 A: Well, it was an interesting school. It was a Methodist school, and really sort of an outreach project. At
42 that period there were a number of schools, places in the South, where there were no high schools for the black
43 students. Else they had to ride miles and miles to go to a consolidated school because of
44 segregation. So these schools were started around the South to provide high school educations for black
45 students. Mine was a girls' school, and the teachers — it was very small, everybody knew everybody and
46 everybody was convinced that you were going to do great things. We all just knew we were going off to
47 college and we were going to have great careers because our teachers were so convinced we were going
48 to.
49
50 **B: And you did!**
51
52 A: I did! [both laugh]
53
54 **B: Well, did you have brothers and sisters who went to college and professional careers?**
55
56 A: I'm an only child. So, no, it's just me. So all the hope's pinned on my shoulders.
57
58 **B: All right! You had said you only went as far as geometry, but was there a teacher or someone else in**
59 **your early life who inspired you to pursue a career in math?**
60
61 A: Actually my grandmother. My grandmother was a sixth grade teacher — in fact, taught me in the sixth
62 grade. And she really loved math and always wanted to go further in math. So she kind of pushed me to
63 excel in mathematics. So it seemed natural to go ahead and major in it when I got to college. She made it
64 fun. She would give me things to do, puzzles to solve, exercises to do, and it just got me interested in
65 seeing what could I do with math.
66
67 **B: Interesting. Well, you clearly went on to college. Why did you choose your undergraduate**
68 **institution?**
69

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70 A: Well, it was chosen for me. Actually, I had the good fortune of being a Presidential Scholar under Lyndon
71 Johnson, one of the first Presidential Scholars. And there were two of us from each state chosen to go to
72 Washington to meet the President. And at that meeting there were a number of representatives from
73 colleges and they said, “Wherever you want to go, you can go. We’ll find money!” And my grandfather
74 said, “Oh, no. She’s going to Spelman.” So I packed my suitcase and went to Spelman. I really wanted to
75 go to Oberlin because I had read about it and it seemed like just a great place, with a lot of intellectual
76 ideas and a lot of new ideas. But I really liked Spelman once I got there. I think he knew better than I did
77 where I needed to be.

78 [5:20]

79 **B: And did you know when you started Spelman that you wanted to major in math?**

80

81 A: Yes, I did. From the first, I knew I was going to be a math major. There was never a doubt in my mind.
82 My doubt was what I was going to minor in. And, in fact, I couldn’t make up my mind, so I was an
83 English minor and a biology minor. And I thought I was going to put all that together and become a
84 science writer. So I was going to have the two science exposures. And the English for the writing. And
85 my goal was to be a science writer.

86

87 **B: Do you ever do any science writing now?**

88

89 A: I really don’t, except reports I suppose. But I just, you know, I just never got back to that. But that was
90 where I was sort of planning my career.

91

92 **B: Well, what kind of support did you have at Spelman? Were there other women studying**
93 **mathematics? Were there particular professors that encouraged you? What was it like for you**
94 **studying at Spelman?**

95

96 A: Well, Spelman was ... is — I mean, I know it’s an all women’s college as well. So I went from a girl’s
97 high school to a women’s college. And the thing about being in that kind of environment is that nobody
98 thinks you’re odd if you want to do well in math or science. Nobody thinks you’re unfeminine or
99 anything, they just encourage you. So there were a number of us who went to school together as math
100 majors. Some of them have since become ... one of them, actually, a couple went to medical school
101 actually with the math major and they added biology to it. A couple of them I have heard about other
102 places. Some women went on to get the higher degrees.

103

104 But it was never any question that we could not do it ... that we would do it. Our teachers were very
105 encouraging. One in particular, Dr. Etta Falconer, was one of the first black women to get a Ph.D. in
106 mathematics. And she was studying for her Ph.D. while I was at Spelman. She taught me. And I
107 remember that she gave me one of the two Bs I ever got in college. My sister got married the end of my
108 sophomore year. And ...

109

110 **B: Your sister got married? But you told me ...**

111

112 A: My stepsister.

113

114 **B: Your stepsister.**

115

116 A: I had a stepsister.

117

118 **B: You said you didn’t have siblings.**

119

120 A: Right, I'm sorry. I didn't get my stepsister until I was 17, so I tend to remember ...

121
122 But yes, we were both at Spelman, and she got married. And my mother was not in favor of her getting
123 married in her freshman year. So [my mother] told us — she gave us a budget and a book on how to plan
124 a wedding — and told us if we insist on doing this, we should do it ourselves. Well, we did, but in the
125 process I didn't study for my final in calculus.

126
127 So when I went to take the test I did something I had never done. I stayed up all night to try to study. My
128 mind went blank. I don't know what I put on that paper. So I went in afterward to talk to Dr. Falconer,
129 and she says, "How could you blow this A average?" She said, "I'm going to have to give you this B. It's
130 going to hurt me to do it." She wrote it down. And she said, "What happened?" And I told her my sister
131 got married. She said, "Well I hope you don't have any more sisters."

132
133 **B: So did she or others encourage you to go on for further education when you finished Spelman?**

134
135 A: Well, I didn't finish Spelman actually. I dropped out and got married and finished Purdue later. But when
136 I came back to Georgia to pursue my Master's in computer science (not mathematics), Dr. Falconer found
137 me again, took me under her wing, encouraged me, hired me as a graduate teaching assistant at Spelman
138 while I went to Atlanta University, and got me a job at Spelman full time when I finished my Master's.

139
140 **B: Well, let's back up and find out how you finally got your college degree. When did you leave**
141 **Spelman and where did you go?**

142 [9:41]

143 A: Oh, I dropped out because I was in love and we wanted to get married. And at that time Spelman had a
144 rule that you had to give them a year's notice if you wanted to stay in school and get married. And we
145 didn't want to wait a year. So I dropped out and we got married and he finished Morehouse, which is the
146 male school across the street from Spelman. And then we went off to West Lafayette, Indiana, for him to
147 pursue his Master's at Purdue. Well, since I was living on a college campus, I decided I might as well
148 finish school. So I enrolled. Purdue was very helpful. I went to school for in-state rates, very inexpensive,
149 and I finished; the same day that he finished his Master's, I got my bachelor's in mathematics.

150
151 And I was going to go on for my Ph.D. in math. Had been admitted. Had this fellowship. But he decided
152 he was not going to stay and pursue the Ph.D. as he had planned. And he was going to go to work in
153 Cincinnati, Ohio. Well it seemed like a bit of a commute. And if you think, 1970 was not the time when
154 women typically thought, "Well, I'll go to school in this state and my husband will be in that state." So I
155 followed him to Cincinnati, and didn't go back to school for several years and two babies. Eventually I
156 did go back to get my teaching certificate.

157
158 **B: In Cincinnati?**

159
160 A: In Cincinnati. So I went to University of Cincinnati and did graduate courses to get my teaching
161 certificate, and taught high school math for a while.

162
163 **B: Oh! Did you enjoy that experience of teaching high school math?**

164
165 A: Well, I did. Not at first. At first it was really sort of just a challenge. I was a substitute teacher — what
166 they call in Georgia a supply teacher. And I was going to all these different schools. You had to find the
167 school. You had to learn the rules. But then I was recommended to work in a magnet program, a college
168 prep school. It was public school, but still it was a magnet college prep. And that was just wonderful
169 because the students there knew if they didn't do well they were going to have to go back to their

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170 neighborhood schools. They were about business, everybody was about business, it was great. So I really
171 discovered I liked teaching, that I really enjoyed seeing the students, that feeling that comes over the
172 students when they know they've gotten that idea. And I said, "Well, this is what I want to do!"

173
174 **B: So ... somehow you ended up back in Atlanta. Do you want to tell us about that switch? You're a**
175 **high school teacher, you have two children ...**

176
177 A: Three, actually.

178
179 **B: Three by then.**

180
181 A: Well, my husband and I, I guess, came to a midlife crisis, whatever, but we decided to part ways. And I
182 went back to Atlanta, where my mom was, and took the girls. And I said, "Well if I'm going to do well
183 I'm going to need a Master's degree because I'm going to need to be making decent money for these
184 children." So I went over to Atlanta University, which is again across the street from Spelman and
185 Morehouse, and talked to them about getting into a graduate program.

186
187 At first I was thinking about getting a Master's of Arts in teaching. And the chair of the department of
188 mathematics and computer science persuaded me that I really should get a Master's in a subject area,
189 computer science or mathematics. When I started thinking about how long it had been since I did a proof,
190 I decided to go for the computer science. And I had done some computer science courses in the process of
191 finishing my degree at Purdue. In the process of getting a teaching certificate I had done some computer-
192 related courses. And we had gotten a Radio Shack computer and I had played around with that. So I
193 thought, "Well, I think I'd like to do computer science!" And the rest is sort of history, as they say.

194
195 **B: So tell us a little bit more about that Master's and the ...**

196
197 A: That was kind of an interesting experience because here I am, I've just moved from Cincinnati to
198 Georgia. Run around and try to find three different schools for three different daughters and get myself
199 situated. And I'm trying to figure out, "OK, how do we do this?" You know, it's been a while since I had
200 been in school full time. I took courses for my teaching certificate part time. So it's a whole different
201 experience trying to be in school part time, trying to work enough. I used to joke that I had three part time
202 jobs, one for each daughter. And really, one serious, when I was a graduate teaching assistant, I taught
203 pre-calculus at Spelman, while going to school at Atlanta University, and I worked in the math lab. Then I
204 had a part time job working in the med school library. Because there's a medical school also co-located
205 with all these colleges. And if that weren't enough, periodically I taught BASIC to children on the Apples
206 at Spelman in the continuing education program.

207 [15:22]

208 **B: Oh my!**

209
210 But the job that really saved me was the library job, because it gave me about 15 hours a week
211 uninterrupted study time. If I was at home I had to do three sets of homework before I did mine. But the
212 girls didn't mind if I was off working and I wasn't helping them. They understood that. And we lived
213 with my parents. So they were able to feel supported, and not feel neglected, and I was able to get some
214 homework done.

215
216 **B: Were you doing any research? I mean, I don't see how you would have had time, but...**

217
218 A: Nothing except the research I did for my thesis, my Master's thesis, which was actually a study of
219 criterion ... a tool for helping students get ready for a criterion reference test that they had just put into

220 place in Georgia. So I worked with a school, a local school, and developed software for them to help them
221 drill the students to get ready for the test.
222

223 **B: Were there particular people in that experience that mentored you?**
224

225 A: Well, I was still interacting with Dr. Falconer, who was right there. And also Dr. Benjamin Martin, the
226 chair of the department, was very much a mentor for me. He was the one that found me the job at the med
227 school. When I came down and said, “Well, you know, I need money. I want to go to school, but I need
228 money.” And he said, “Well, are you serious?” He said, “All right.” He said, “Well, I have a job for you.”
229 His wife ran the library at the medical school. He said, “Come on!” So he walked me over to the medical
230 school. I had no idea where we were going. The medical school had moved since I went to Spelman, so I
231 have no idea where we were going. He says, “OK, she wants a job.” So she put me to work. I said, “OK,
232 fine.” And he told me later that he did that to see if I was serious. He said, “A lot of people would have
233 said, ‘I don’t know; I don’t want a job like that. I don’t want to sit behind this desk and just check out
234 books.’” He said, once he figured I was serious then he got the graduate teaching assistantship, and he
235 was very helpful. But it was a little test to try to see if I was about business.
236

237 **B: Well, in this period of time were there other people that you were friends with going through the**
238 **program? Did you have support from colleagues, other students?**
239

240 A: I made friends, but in terms of that not so much. It was really hard for me to find time to work with other
241 people. By the time I did the job and the kids and the classes, I ... really, my best help at that point was
242 my mom, who had decided to get interested in computers from a user perspective and in fact went out and
243 bought an Osborne. Now you may not remember the Osborne, but it was supposed to be portable, but it
244 was more like luggable. And it had a little about 5-inch screen. And she went out and bought this
245 ostensibly because she wanted to try to word process on it. But I later figured out that she did it so that I
246 could do some of my homework without having to go to the lab. Because we had to program, I could do
247 some of my programs on there, at least the preliminaries. And my database stuff I could do on there. And
248 that was why she went and got it. She was really supportive. She would encourage me when I was getting
249 down. She would tell me, “Pick up that book, you’re sleeping on it” after I had helped each child
250 successively with her homework and thought I was going to do mine. So she was really there for me. I
251 couldn’t have done it without her.
252

253 **B: Well, you finished up your Master’s thesis.**
254

255 A: And went to work teaching at Spelman full time, only now computer science instead of math. And
256 Spelman was just beginning its full computer science major at that time. Before that there was a joint
257 program among the Atlanta University Center schools.
258

[19:44]

259 **B: The Atlanta University what kind of schools?**
260

261 A: Atlanta University Center, which is Spelman, Morehouse, Clark, Atlanta University, Theological
262 Seminar, and the Medical School, and I’ve missed one ... Morris Brown. So the undergraduate schools
263 had a joint computer science major. The first year they stayed at home. They took intro ... Fortran, I think
264 it was at that time. And after that they went to the joint program, which met at the library — we have a
265 joint library. But Spelman was finding that there was a boom. This is the mid to late 80s, there was sort of
266 a boom in computer science. So the girls were finding it difficult to have to try to wait in line for their
267 turn at the joint machines. There were cases of the girls being bodily lifted out of the line by the fellows
268 who wanted to get to ... And also they felt like they didn’t have good control over what kind of education

269 the girls were getting. So it was decided to start our own program. So we were the first of the AU Center
270 schools to get our own 4-year degree.

271
272 So I got to be in on the ground floor of that. I helped write curriculum. I helped do some of the courses.
273 That's back when we had the CS1, CS2, CS3, the seven courses. And I got to help write syllabi and plan
274 the curriculum. So it was an exciting time to be in computer science.
275

276 **B: And then?**

277
278 A: And then Dr. Falconer showed up again and said, "Well you know you can't stay in college teaching if
279 you don't have your Ph.D." She said, "It's like a driver's license, you've got to go get it." And I'm like all
280 these children, you know? And they were getting ready to go to college, too. So I'm like, "I don't know
281 how I'm going to do this." So she goes away and leaves me alone. After a while she comes back and says,
282 "I put you in for this fellowship, you need to start applying to schools."
283

284 So sure enough she got me a fellowship, an IBM UNCF [United Negro College Fund] fellowship, and I
285 decided to try to find a school. Well, I thought about North Carolina because I'm from there, but I
286 couldn't find a program in North Carolina that had graduated a black person in computer science. I
287 looked. I thought about Georgia Tech, and I was a little dubious about going there. And it was the only
288 Ph.D. program in the state of Georgia. And I applied to ... I talked to some people from the University of
289 Tennessee, Knoxville, and also Chattanooga, and they were very encouraging. One of them offered me
290 this fellowship; they had a house I could rent for the kids. So I'm thinking about moving. And my girls
291 had a family meeting without me. And they came to me and they said, "Well, Mom, we know you want to
292 go get your degree and we're going to support you. We're going to do our work so you can do yours. But
293 we have a condition. You've got to go to Tech, because we're not moving."
294

295 So I got in my car, drove over to Tech, and applied. And as it turned out, that worked out well. It was a bit
296 of a challenge. Georgia Tech was a school that was traditionally male, traditionally white. So I sort of felt
297 like I was too old, the wrong color, the wrong age to be going there. There was nobody that looked like
298 me. Very few women in the program. And there were maybe 110 students and maybe 8 of them were
299 female in the Ph.D. program when I went. And most of them were in their 20s. And I had a college age
300 daughter, so I obviously wasn't in my 20s. And it was kind of difficult in the sense that, you hear people
301 talking about the isolation, about how people don't want to form study groups with you. I would end up
302 doing projects by myself because I couldn't get a partner. And there were a couple of times when I
303 thought, "You know I don't really want to do this. I can go back to [teaching in] high school. I know how
304 to do that." But I stuck it out. I had a friend who encouraged me and ...
305

306 **B: At Tech?**

307 [24:44]

308 A: No, actually, no. Not that I didn't have some people at Tech who were supportive. I don't want to give the
309 impression that nobody was. The fellow who was in charge of the program at the time I went in was
310 actually in an acting capacity. And I had gone over and taken a couple of courses as a non-degree student.
311 And Tech had a new president, [John Patrick] Crecine was becoming president. He gave a speech about
312 how Tech was going to increase diversity and become one of the leading producers of minority students
313 — graduates. So they called me up, and they said, "What would it take to get you to come full time? We
314 have a fellowship for ..." I don't know, I think \$14,000 or something. And I said, "I can't pay a mortgage
315 and feed three children on \$14,000." Even in 1988.
316

317 So ... but he was very supportive, and stood up for me. Some of the professors didn't believe that I could
318 know anything, having gone to Atlanta University, which was a black school. And they wanted me to go

319 back and take courses — they didn't want to let me into their courses, they wanted me to go back and
320 repeat undergraduate level courses and to take things that I just didn't have the time or energy to take
321 again. I remember, one of them set me down, he wanted to know the name of my textbook; he wanted to
322 know this and that. And the ironic thing about it was, the particular course he was talking about I had
323 taken at Tech, and he still didn't want to accept that I knew enough to go into his course. So this guy —
324 and I really can't remember his name, he's passed away since — but he stood up for me. When the
325 advisor wouldn't sign me into courses he would override. And he said, "Well let's just see how she does."
326 And I was able to do them. So he was a big help. Peter Freeman became dean of the College of
327 Computing, and he was very supportive and helpful. My advisor was good in that he helped me figure out
328 how to apply my interests in teaching and education to computer science, and human/computer
329 interaction.

330

331 **B: Who was that?**

332

333 A: Albert Barr. So he was helpful in that. And my officemate, Jeanette Allen, was really a support. Now, the
334 first couple years I was over there, I didn't know her. But when I went full time I met her and ... she was
335 ... had the same advisor and a similar area of interest, and we were able to take courses together. When
336 we did our minor — she was ahead of me in the other courses, so I wasn't in those with her — but we did
337 a minor together. Tech requires you to take 6 courses from another discipline as a minor. So we made up
338 a minor, we built a minor, with psychology, and industrial engineering, statistics kinds of courses. An
339 experimental kind of minor. So we took psychology courses and statistics.

340

341 And it was so funny because she really wasn't very good at math. So we're taking these statistics courses,
342 and advanced statistics courses, 6000-level statistics courses. And a guy refers to something, and both of
343 us look completely blank. We're like deer in the headlights. And he stops and he says, "Well, you know
344 about this and so don't you?" And we said, "Nooo." And he asks something else and finally he says to
345 Jeanette, "Well you've heard of calculus haven't you?" So we go to his office afterwards, and we say,
346 "Well, you know, should we drop, should we go back and take a prerequisite course?" And he kind of
347 looks at us and shakes his head and goes, "You've made it this far, you might as well finish." But he did
348 give us an extra book to go through, and we made it through. And it was so funny because we took
349 another course from him — a course that's known over there as "Design of Messy Data" (that's not the
350 real name!). But we did a project in that course for him that led to a journal publication. So he was very
351 supportive, even though he was outside our discipline — and even though we thought he was going to
352 have to go and take blood pressure medication after dealing with us.

353 [29:57]

354 **B: Did you get into research for your degree and did you enjoy research?**

355

356 A: I did. I really enjoyed it. I ... I've said I was a human/computer interaction, so I did experiments on using
357 animated algorithms to teach computer science. So animations. So I had to develop animations, develop
358 tests on the animations. And I was able to use some of the students at Georgia State, some of the students
359 at Georgia Tech for my subjects. Georgia Tech has this nice thing where psychology students have to be
360 in experiments. So you don't have to try to bribe them to come and be in your experiment, because they
361 need an experimental credit. So it made it easy to get them to come in and try my animations. And it took
362 me a while to kind of get to that. At first I thought I wanted to write an intelligent tutoring system. And
363 one of my committee members, John Stasko, was doing animations. And he said he would be really
364 interested to see if they really helped. And everybody said, "Ooh, ahh!" when they saw them, but he
365 wasn't sure if they would really help.

366

367 So I took that as my project, and it was very interesting. I got to figure out all the nuances of what do you
368 do to animations: Is it the color that matters? Is it how fast they move? Is it how you represent the data?

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369 And what I really found out was that it's involvement. If the student isn't involved, it's just like watching
370 a cartoon or something, it doesn't really go in. If they don't do something, if they don't put in the data, if
371 they don't manipulate it some kind of way, it doesn't seem to stick. So that was fun.

372
373 And I had some great people on my committee, and they were really helpful. So I was very lucky that
374 way. They were very good. One of the guys read everything. If I couldn't find my advisor, he would take
375 those — when the drafts got to be 100 pages of dissertation — he would still take it home over the
376 weekend and read it and bring it back with suggestions. So that was great I was able to get that kind of
377 support.

378
379 **B: So you finished your Ph.D. ...**

380
381 A: I did, with Dr. Falconer pushing me every inch of the way.

382
383 **B: There she is again.**

384
385 A: She was, she was right there. And went back to Spelman and ...

386
387 **B: So were you on a leave when you were going full time?**

388
389 A: I was on leave for 3 years. The first two years I had the IBM fellowship, and the third year I had some
390 other funding, so I was able to stay. But at the end of the third year they told me I had to be back in a
391 classroom or give up my job. Well, I couldn't afford to give up my job because I had a child going to
392 school on the free tuition for employees. So I knew I had to go back in the classroom, and I wasn't quite
393 finished. So the fourth year I was going to school full time and teaching. And Dr. Martin by now had left
394 Atlanta University and was at Spelman. So he was my chair. So he was very helpful in helping me
395 develop a schedule that would let me do that, a teaching schedule that would let me have full days at
396 Tech.

397
398 And I found out one thing that was sort of a trick. That I had ... if my advisor didn't see me, he didn't
399 think I was working. So I was there all day Tuesday, Thursday, and Saturday. So what I found out I had
400 to do was along about Wednesday I would leave work, ride to Tech, put my coat in the office, go by, let
401 him see me wandering back and forth carrying something, speak to him, and go home. And after that
402 happened he said, "Yes, I'm glad to see you're really working now." OK!

403
404 **B: Bring your coat.**

405
406 A: But I had to put the coat off first because it had to look like I was there. So it was interesting how that
407 half-an-hour really made a difference to him, because he felt like he was seeing me every day. But that
408 was a bad year. I was glad to get to the end of that year. But it all worked out. I got out and got the degree,
409 went back to teaching full time. And I really have enjoyed my time at Spelman, it's been great. I've been
410 chair for a good part of the time. And in that sense I've gotten to shape the curriculum and shape the
411 department. And that's been very satisfying.

412 [35:12]

413 **B: Can you share with us your teaching philosophy, and has it changed over the years?**

414
415 A: Oh! That's a hard one. I think my teaching philosophy basically is to try to help the students find out how
416 to learn. So what I really am about trying to do is showing them enough so they can go from there later,
417 when they don't have me. And I think the other piece of my philosophy is that I should make an effort for
418 them to understand me. That is if I were to give a test and everybody was unable to do something, or even

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419 a majority, I would think that was my fault. Because if the good students can't get it, then I'm not putting
420 it across. So I always measure my success as a teacher by their success as students. And I don't think
421 that's changed much. I think I've always been inclined to think that the measure of a good teacher is
422 whether the students are really learning.
423

424 **B: What courses have been your favorites to teach and why were they your favorites?**

425
426 A: I really like to teach intro programming. And I like programming languages. And I like human/computer
427 interaction. But my favorite is intro programming because it's such a joy to see when they get that sense
428 of mastery, that "I can do it." To go from that basic "Hello World" to a complicated combination. And
429 they come in and say, "It works! It works!" That makes me really feel good, so I like that course.
430

431 **B: Do you have a particular story to relate about any particular students or classes?**

432
433 A: Oh! I think that ... one of the things I've had about is that many of my students have almost become like
434 daughters. And they've consulted me and come in and asked for my advice. But one of my favorite
435 students, who actually went to MIT from Spelman, came in to me one day and she said, "Oh, I just don't
436 know. I've been working and working on this project" (she was doing independent study with me) "and
437 it's just not working" and this and that. So I was trying write her a reference and I said, "Well, I'm writing
438 down about how you've done all this research." She said, "Well, I haven't done any research, it doesn't
439 work!" So we had to have a long talk about what research really was. That research was finding out that
440 no, this doesn't work, and why. So she ... and I've been very close to several of my students. I get invited
441 to weddings. I get baby pictures in the mail.
442

443 The funniest one, though, was when I had to teach my niece. Actually my ex-husband's niece, I should
444 say. But that doesn't matter at that point. By that time, she was my niece. So she came to Spelman, and
445 it's a small department, I had to teach her. Everybody has to teach everybody. And it's very funny
446 because her dad is a college teacher in math. And other mathematicians know him. So they would do stuff
447 like call me up and say, "Well, you know, I have a student who's not doing such and such." They
448 wouldn't call in the names, but I knew they were telling about her. And then at one time, she was in my
449 class and we came ... well, I said, "Come on we're going in my office." We had a long talk. I said,
450 "Look. I may be your aunt and I may love you dearly. But you're about to earn a D. And I'm going to
451 give it to you. I'm going to be very sad to give it to you. And I'm going to call your mom and dad up and
452 explain why you got it, but you're going to get it." So she left my office, after she wept on me. And do
453 you know, that girl didn't turn anything in below a 95 for the rest of the semester. And I said, "You could
454 have done that all along."
455

456 But she left Spelman, went to Auburn, and she had a 4.0 for her Master's. So she graduated from
457 Spelman. And I said, "Now you could have done that at Spelman." But she now has a Ph.D. in computer
458 science. So she's one of my success stories.
459

[40:23]

460 **B: Good! We're going to shift gears now and talk about professional organizations. What kind of**
461 **professional organizations do you belong to, computing or research or computing education, what**
462 **kind of organizations?**

463
464 A: Well, I've been very active — not active in a sense of committees — but SIGCSE, I go to the conference
465 every year, keep very interested in what goes on there.
466

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467 I also have stayed part of the Mathematical Association of America, because when I was teaching math at
468 Spelman, back when I first went, they gave me a membership. And I kept that up; I still go to workshops
469 and conferences in math. Math is such a foundation to computer science that I kept that interest.

470
471 And I'm also the outgoing president of a minority computer science organization called ADMI, A-D-M-I,
472 which has a very unwieldy title: Association of Departments of Computer Science and Computer
473 Engineering in Minority Institutions. That's why we abbreviate it! But this organization is designed to
474 help deal with some of the problems we have with some of our minority institutions. We have Hispanic-
475 serving, Native American, and HBCUs [Historically Black Colleges and Universities] as members,
476 mostly HBCUs. We have an annual symposium where students present research and they're exposed to
477 opportunities and research and careers and grad school.

478
479 And I have a student who attended one of those graduate school sessions who has since credited me
480 publicly with being the one who inspired him to go on and get his Ph.D. And he said he had never seen a
481 black person with a Ph.D. in computer science. He was finishing his Master's. He was thinking about a
482 Ph.D. and thinking about, "No I don't want to do this, this isn't for me." And he came to our workshop
483 and decided well, yes, he would stay and finish school. And he's now a faculty member at Auburn
484 University, Juan Gilbert is his name. He writes a column for IEEE — for one of the ... for *Computer*, I
485 believe. And he's IEEE Board or Fellow. So I'm thinking OK. And then I had my niece, who went
486 through the ADMI organization presenting. Some other students.

487
488 So we're thinking that this encouragement, this showing them that "this is what you can do," is very
489 important. Even from a smaller school, from a minority serving institution, that you can use it as a
490 springboard to great things, is a very important thing our organization can do.

491

492 **B: Have these professional organizations affected your career?**

493
494 A: You know, actually speaking, I don't know that they really have affected in the ... Except that they've
495 kept me engaged and excited about my profession. When I go to SIGCSE and find out new things people
496 are doing. When I interact with my colleagues. And when I work at ADMI and see the students succeed. I
497 think that brings me back, refreshed, renewed, with new ideas, and keeps me from falling into a rut and
498 having things become stale. So in that sense yes, they very much have.

499

500 **B: This is sort of another tack in the same thing, but what role has supervising undergraduate students**
501 **played in your career?**

502

503 A: Well, Spelman is a small undergraduate liberal arts college. And you often would think there's no
504 research. But in fact one of the things that we have done in our sciences is to stretch the idea of
505 undergraduate research, that we want — for instance, in computer science, our goal is that at least half of
506 the students should do some undergraduate research before they graduate. We hope for two-thirds, but at
507 least half. That's one of our objectives. So every year, just about, I've had one or two or three students
508 doing some kind of project. And we take them all over the place to present. They've been to Incur,
509 they've been to the ACM Regionals, they've been to other national organizations, conferences, as well as
510 things like ADMI.

511 [45:24]

512 And I think that really keeps me interested in new things. For instance, I had two students who wanted to
513 know about bioinformatics. Well, I didn't know any more about bioinformatics than they did. So we got
514 three textbooks and found a faculty member who did know something about it, and we got to work. And
515 it was really very interesting. We learned about how string-matching algorithms — that we had learned in
516 the algorithms course — could be used on databases to find out about gene similarities. So it's something

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517 I never would have done if they hadn't wanted to do it. So I think keeping ... working with students keeps
518 me exploring new ideas, looking into new things.

519
520 My latest is I'm learning about ice sheets in Antarctica. We're going to be analyzing data from the census
521 that measured the thickness of the ice in Antarctica. Now, I don't know if I'm going to get to go to
522 Antarctica on the field trip. Some of the scientists in the project are going to go. I'm not sure I'm going.
523 In fact my daughter expressly forbade me to go, but ... I'm really excited about this; it's a whole new
524 realm of study. And my idea is to apply what I know about HCI to make the data more meaningful. So I
525 have one student who's a biology major, I have a math major, and two computer science majors. And the
526 biology student wants to work on how, if the ice really is melting, this may affect the biosphere. The
527 mathematics major is interested in analyzing. The computer science major is also looking at how we're
528 going to do algorithms to analyze the data. So that's my latest project and I never would have thought of
529 it.

530
531 **B: Wow!**

532
533 A: So I guess having undergraduates around teach you thinking.

534
535 **B: Well, have you spent time volunteering your professional service, and has this affected your career?**

536
537 A: I guess I do spend a good bit of time. I do things. I go to high schools and what not and speak and do
538 career presentations. I worked on conferences. I read reviews. I do the standard ... I read proposals, for
539 NSF and NASA. So I guess I do spend a good bit of time doing that. I think that's been really good in the
540 sense that it has kept me connected with different ways different people are doing things. You know, you
541 can be in your school and your things are going fine, and you don't look out. I think being involved with
542 other organizations and groups has helped me keep a fresh eye on what I'm doing back at Spelman. So in
543 that sense, yes it has.

544
545 **B: I think you've answered this, that you've found ways to serve as a mentor. You keep in touch with
546 people. Do you have any particular mentoring stories you'd like to ...?**

547
548 A: Well, I did kind of answer it because I told you about Juan and my niece. But I guess that I really am
549 pleased that often students will come back to me years later, and they will say well, the fact that I was
550 willing to sit down and talk to them about whatever it was, whether it was school-related or whether it
551 was personal, was important to them. And I will get email back saying, "I finally went to grad school like
552 you told me to ... six years ago — or four years ago." So I think I'm doing a good bit in that role, serving
553 as mentor to my students as they go through.

554
555 **B: And you have mentioned this, that there have been challenges in your life. Are there any particular
556 challenges that you didn't mention that you would like to mention?**

557 [49:54]

558 A: Well, the one I think that — and maybe I would mention that, because I did something that maybe other
559 people can do to help them — when I was at [Georgia] Tech, I think I mentioned I felt a little bit out of
560 place. And one of the things that Tech did was they had a support group for the woman students, the
561 woman graduate students. And I used to go to that sometimes. And that was really good, because it
562 helped me to see that other people were having ... not the same issues, similar kinds of issues. Like the
563 mechanical engineering Ph.D. student who had her bachelor's and Master's from Tech, and had worked
564 in industry and come back. And her fellow teaching assistant offered to show her how to compute an
565 average, because he thought she was going to have trouble. This is a woman with a Master's from Tech,
566 an engineering Master's. So it made me see that women went through darn near the same thing. It wasn't

567 just the computer science department, it was sort of a feeling of the sciences and engineering school, and
568 it wasn't personal. And sometimes when you know things aren't personal it's easier for you to handle.
569

570 And what I gain from that is that if you're in that kind of situation you should seek a support system,
571 whether or not it's at school. When my daughter went to MIT, she had some similar issues. And she
572 actually found a church home and then revised the Black Graduate Student Organization, because I told
573 her I had help establishing one at Tech when I was there. So she advised on one at MIT and became
574 president, and found that as a support system.
575

576 So I think that what I found out with the challenges is don't sit there and suffer by yourself. Reach out for
577 whatever support, whether it's friends, whether it's family, whether it's a group, whether it's a church,
578 whether it's an organization. Get involved.
579

580 **B: Were there any compromises that you had to make going through your career?**
581

582 A: Well, I guess in the sense that I ... I did a lot of my compromises before I got into the career, when I did
583 things like *not* go to graduate school because my ex was ready to move to another city, and *not* go to work
584 right away full time because he didn't really want me to work. After that it was more a priority balancing
585 kind of compromise. You know, maybe I have to give up ... I guess what I did do is, after I was divorced
586 and moved back to Georgia, didn't do much dating or anything like that. Because between the children
587 and the job and the school, there didn't seem to be any time. So I guess that's one compromise I made. I
588 had to choose what was important and what I had time to do.
589

590 **B: Do you have any other outside interests that would help us understand you any better?**
591

592 A: Oh! I guess, there are two things I spend ... no, three things ... four things I spend time on. So I do have
593 things I do. I love to read. And I read omnivorously: romances, science fiction, mystery, popular novels,
594 nonfiction. If it's between covers I'll probably try it. I may not finish it, but I'll probably try it.
595

596 I like quilting. And that's something I used to do back when I was being a full-time homemaker, and then
597 I picked back up lately. And I belong to a quilting group that we have an annual show. People come in
598 and admire our work. So that's kind of fun.
599

600 I love to travel. And those who know me know they may find me anywhere. There's ... and I've
601 combined my interest in computer science with that. So if I go to conferences, but I also enjoy where I go.
602 I always make an afternoon or a day, just explore the city, if it's just a couple of hours. So I learn a new
603 place while I'm doing it.
604

605 And I have my grandchildren.
606

607 **B: I was going to say, aren't you going to talk about that other interest?**
608

[54:45]

609 A: I have my grandchildren. And they take up a lot of my time. I have two granddaughters, they're 6 and 11.
610 Alexandra and Avery. And they keep me very busy. The older one, Alexandra, is firmly trying to manage
611 me now. She'll explain to me how, "Nanna, you were gone too long the last time. It's okay if you're gone
612 for this long, but if you're going to be gone for any longer than that I need to go." So she'll explain it to
613 me very carefully. But they spend — my daughter works at night and she's at school now — so they
614 spend several evenings ... nights a week at my house. So I'm doing my second round of, "Did you lay out
615 your uniform?" "Where are your socks?" "Did you finish your homework?" "Put your book back in the
616 car." And sometimes it wears me out, but I think it keeps me young, too. So I really enjoy them. They're a

617 lot of fun. And I'm instructed that I'm not to leave Spelman until my older granddaughter gets there. So I
618 see that I'm not going to be able to retire this year.

619

620 **B: Well, we're about to wrap up, and couple questions here. But if you could give advice to a young**
621 **woman starting out, what would it be?**

622

623 A: If I could give advice, I would advise that you not limit your choices, that you consider all kinds of
624 possibilities. And that if something gets hard that you look around to see how can you succeed. Don't just
625 give up, but look around and see what do you need to do differently so you can succeed. And I would
626 advise them to pick something they like to do. If you're going to be doing something all day long for 30
627 or 40 years, you want to enjoy it. So not by prestige, not by pay, but by what you can enjoy and get
628 pleasure from doing.

629

630 **B: If you could change one decision you made along your career path, what would it be?**

631

632 A: If I could change one decision, I think I would have chosen to be more actively involved in research after
633 my ... immediately after my Ph.D. I didn't realize at the time that if you let your research kind of lapse it
634 was hard to get back into it. So when I came back into it, I've never been able to get back to the depth that
635 I would have liked to get to. I've been able to do some things, had some publications, but I haven't been
636 able to do as much as I would have done if I had known that it was important to keep publishing, to keep
637 working.

638

639 **B: And if there's one story you want to tell so that it would be remembered, do you have that one**
640 **story?**

641

642 A: Do I have one story? I think I do have one story. And that one story is that when I got ready to go back to
643 graduate school, I wasn't sure if I could do it. It had been a long time since I had done serious science and
644 serious mathematics. And I talked to some people, and one in particular was very encouraging. They said,
645 "Well, I think you can do it." My family was supportive. My mom was supportive. And I think that ...
646 My dad was supportive; he helped me out financially when I couldn't do it. And I think the story I would
647 tell is that there's ways to do things. That if you just ... just have to keep looking around to find the ways
648 to do it. And that you don't know what your path is going to be. I never thought when I said I was going
649 to go get my Master's at Atlanta University, that I was going to end up getting a Ph.D. and trying to
650 inspire other people to go get a Ph.D. But that there's opportunities out there if you just keep your eyes
651 open. So I think that's my story, just keep them open.

652

653 **B: Good! Well, thank you Andrea, this has been fun for me. And I'm really happy you decided to**
654 **spend this time giving your story.**

655

656 A: I was glad to do it.

657 [59:46]