

1 **Tracy Camp**  
2 **May 29.2007**  
3 **Golden, Colorado USA**  
4 **Interviewer Barbara Boucher Owens**

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6 **B: All right. This is an interview with Tracy Camp from Colorado School of Mines**  
7 **conducted by Barbara Boucher Owens. It is being recorded on the 29<sup>th</sup> of May 2007 in**  
8 **Golden, Colorado, United States as part of the Computer Educators Oral History Project.**  
9 **Now did we give and pronounce your name correctly?**

10

11 T: Yes.

12

13 **B: Good. We're going to start way back when. We are going to start with your**  
14 **parents. Did either of your parents have college degrees?**

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16 T: No. Neither. My father had an eighth grade education, actually. For him, having a  
17 daughter that not only graduated from college but went all the way through the PhD was an  
18 immense pride for him.

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20 **B: Were either of them in any kind of computer related or math related fields like**  
21 **science or engineering?**

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23 T: No, my dad was blue collar; definitely blue collar; as for his parents, his father died when  
24 my dad was very young and his mom went blind. He had nine sisters; he was the only male.  
25 Basically he fended for himself from about the time he was 12 or 13 which is why he had to leave  
26 school and get a job and take care of himself. He was a mechanic; he was a carpenter for several  
27 years. He then worked on swimming pools for several years, but no, nothing computer related.  
28 But he does have a very analytical, logical mind, which I think I inherited from him. My mom has  
29 a high school education, considered going to college but decided getting married and having kids  
30 would be more fun, I guess. She was a secretary and then slowly moved up the ladder and  
31 became the office manager for the company she worked at.

32

33 **B: Were you a good student?**

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35 T: Yes, I was always a good student until senior year of high school, when I kind of fell  
36 apart. Guess I came of age; I don't know what happened. I was a pretty good student up until that  
37 point. Then took a year of being a rebel and not doing the right thing and then got my act back  
38 together and went on to college.

39

40 **B: In high school did you take courses in math and science that prepared you for**  
41 **studying engineering?**

42

43 T: So, I was always a math whiz. I got that logical brain from, mainly from my dad, I think.  
44 Always a math whiz and so took all the way up to calculus when I was in the public school  
45 system. I skipped a grade of math from seventh grade, I think that was the grade I skipped and so  
46 certainly the math helped me quite a bit. I took one computer course when I was in high school.  
47 We had a mainframe computer with punch cards and other things. So I did take that one course,  
48 and I actually failed the course! It was a course first thing in the morning; this was my senior year  
49 and I just couldn't seem to get to school on time. So I think that is kind of funny that I failed my  
50 first computing course. It didn't obviously have anything to do with the skills of computing; it  
51 was the fact that I was late every day to class.

52

53 **B: Well did you have siblings who went on to college or professional careers?**

54

55 T: I have one brother who is a year older than I am and he could not stand to be in school.  
56 So he did manage to get a high school education but then went out into the work world. He and I  
57 are very close and we are similar in many ways, but as far as following the education path we are  
58 very different.

59

60 **B: What kind of career has he had?**

61

62 T: Well, he started working in a blue collar type of company for a steel mill but then my  
63 parents actually started their own swimming pool company that has grown and grown and my  
64 brother is about to take that over. I think last year their sales was five million or something like  
65 that. It's a huge company now that my dad started. I actually helped him start it one summer,  
66 years ago, and then worked there for several years during my summer vacations of school. And it  
67 slowly has grown and my brother has taken it over. That's what he does. He leads this big  
68 company.

69

70 **B: Was there somebody in your early life that was a shaping influence? Like a teacher  
71 or someone that served as a mentor?**

72

73 T: I had several teachers. I think that is true of many women in male dominated fields. You  
74 have to have some people that offer you that extra encouragement to continue and I can name  
75 several. I remember my sixth grade teacher was one that was a huge influence because he was  
76 the one that took myself and a couple of other students aside and let us just go on with math  
77 instead of just following the traditional path. So he was an influence. I remember a teacher in  
78 high school, another math teacher, both males, who were a huge influence in encouraging me to  
79 continue with math and moving forward with math. And as far as from my family my Uncle  
80 Dave was a huge encouragement as well, because he was one person in my life who actually had  
81 a college degree. Nobody else I knew had a college degree. So he was my role model of just  
82 knowing someone personally that had a college degree, that made me think that well, maybe I  
83 could do that as well. And of course, I had unbelievable encouragement from both my parents  
84 that I could go to college and get a college degree.

85

86 **B: So you went to college, but how did you choose your undergraduate institution?**

87

88 T: So my first undergraduate institution was a party school because I, my senior year, I kind  
89 of messed up and wasn't thinking the long term and chose my first school because that's where  
90 my best friend was going. It was the only school I applied to and I got in.

91

92 **B: Which was?**

93

94 T: Ferris State University in Big Rapids, Michigan. I went there a year and then realized  
95 that I was ready to work and learn some things that I didn't already know and so Ferris wasn't  
96 quite for me. So there was a faculty member there, a math faculty member, male, again, who  
97 suggested I apply to Kalamazoo College and my initial reaction to that was there is no way that  
98 Kalamazoo College will accept me, that's a small prestigious liberal arts school in Michigan, a  
99 private school, and I thought there was no way they would accept me. My mom said, "Well we  
100 won't know unless you apply," and I was like, "Well Mom, I think we're throwing our  
101 application fee away." And we didn't have a lot of money when I was growing up. It was week-  
102 to-week. My dad actually worked two jobs a lot of my childhood. We didn't have a lot of

103 money. So to me, spending whatever the application fee was, 15 or 20 dollars to me just seemed  
104 enormous, but my mom insisted: “No, let’s apply and see what happens.” And I applied and got  
105 in and went for a visit and saw a lot of dedicated, hard working students and thought, “Yes,  
106 maybe I could fit in here.”  
107

108 **B: Well, tell us a little bit about your undergraduate experience. It obviously was a**  
109 **good fit. Were there key events or people, subjects?**  
110

111 T: So there were a couple of professors there that I remember quite fondly and I actually  
112 gave a couple of presentations there recently. The faculty members there – Carpenter was the last  
113 name of one and Rajnak was the other – and they told me that they talked about me a lot when I  
114 was at Kalamazoo College because apparently they saw that I blossomed while I was there. I  
115 came in as a student that didn’t really know what she wanted and didn’t really feel as if she fitted  
116 in there, but the academic plan that they have at K-College is pretty unique and I think it helps  
117 students learn about the world. So some of the things you do at K-College, at least when I went  
118 there, I understand that the plan has changed now; when I went there, during your sophomore  
119 year, you did a career development, so you went away for the spring semester and did a career  
120 development at a company and you went to school during the summer. K College was a twelve  
121 month a year school. So your sophomore year you did a career development. In your junior year  
122 you did a foreign study, so I spent, let’s see, my sophomore year in Flint, Michigan, at General  
123 Motors Institute and my junior year I went to France, to Strasbourg, France, for six months. Then  
124 in your senior year you did a senior project for a semester, so again you are off campus for a  
125 semester doing this senior project. And that project actually was with my parents’ new business,  
126 working with them to get that going.  
127

128 I remember when I started at K-College, I thought there was no way I was going to do a foreign  
129 study. I was there to take classes, get my education and then move on and a foreign study just  
130 didn’t seem to fit in that plan. It just seemed to be a frill, I guess, didn’t seem to be a part of the  
131 hard-core academics. When I look back, those six months in France are some of my most  
132 wonderful months of my life. That foreign study was just wonderful. Going to a foreign  
133 language and taking classes in French. I had French art, and French history and French literature  
134 and French language and French, French, French. Looking back, I think I learned more about the  
135 United States living overseas than I had in my 20 years here in the United States. It was an  
136 amazing experience that I treasure. So today, I am always encouraging students to do a foreign  
137 study. You learn a lot more about the world. There is a lot more to the world than just the pages  
138 in a book for a particular course. I think a foreign study helps capture that.  
139

140 **B: So you decided something influenced you to go on to graduate school.**  
141

142 T: Right. So Kalamazoo College did not have a computer science program, or a computer  
143 science degree. They had a mathematical program that had some computing classes, so my  
144 undergraduate education is actually in mathematics and during my senior year when I took their  
145 math comprehension exam and I looked at my career options, which basically seemed to be  
146 actuary type of positions, I thought that I wanted to do something different. Computing was a  
147 draw for me because of the logic. I am a very logical person, so computer science was a huge  
148 draw for that. So I thought, well I don’t really want to be a mathematician when I grow up, so I  
149 am going to go on and get a master’s in computer science and get trained in a different field, and  
150 then get a job. That was my plan.  
151

152 So I went to Michigan State University, their master’s program at Michigan State. The nice thing  
153 about that program was they had a couple of classes that were for students like me that were

154 focused on the details that I hadn't picked up in my undergraduate education. So I had, I think,  
155 two classes that did not count for my master's degree, that I needed to get up to speed with the  
156 other students who had undergraduate degrees in computing.

157

158 **B: Had you had any computing at Kalamazoo?**

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160 T: At Kalamazoo College I think I had three classes. I think I had Pascal, I had a data  
161 structures class, and then I had numerical computation-type class. That is all I recall. Many of  
162 their math classes had programming projects associated with them, but those are the only official  
163 computer science classes that I recall taking.

164

165 **B: Was that Michigan State a master's thesis?**

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167 T: A master's non-thesis.

168

169 **B: And then what happened next?**

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171 T: When I was finishing my master's, thinking about industry, the job market in 1987  
172 wasn't all that great and my parents got it into their head that I ought to get a PhD. I thought both  
173 of them were crazy but I think for my dad who never had education as an opportunity to him,  
174 seeing me go all the way was just huge. So he really wanted me to do that. So the job market  
175 wasn't all that great and my parents, I kid, but I think it is partially true. They bribed me to get a  
176 PhD. They bought me a Trans Am and said you can have this car if you go on and get a PhD. It  
177 wasn't to go on to earn a PhD; it was to go to a university in a PhD program. So at the time my  
178 plan was to take the car and go for a year and then see what other opportunities might come my  
179 way, that was my plan. A year went into two years, and two and a half years, and then pretty  
180 much I thought well, man, I'm so close I might as well finish. Getting a PhD and becoming a  
181 professor was never in my long term plan.

182

183 **B: Well tell me about how you chose the institution for your PhD?**

184

185 T: So I wanted to leave Michigan.

186

187 **B: With your Trans Am?**

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189 T: [chuckles] Yes, with my Trans Am. Definitely took the car with me. I wanted to leave  
190 Michigan because I had lived there my whole life besides the six months in France and I knew  
191 there were a lot of other things to see. But I wanted to go to a small school. I enjoyed the  
192 environment at Kalamazoo College, which only had a couple of thousand students, way more  
193 than the environment at Michigan State which had 55,000 or 35,000 – a number too large to  
194 comprehend. So PhD in computer science, small school – there were not a lot of choices.  
195 College of William and Mary is one of them I applied to, was accepted and offered a teaching  
196 assistantship, so off I went.

197 16:06

198

199 **B: Well, I haven't heard any female mentors at Kalamazoo?**

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201 T: Nope. There weren't any. No female mathematicians.

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203 **B: How about colleagues, students? Was there a cohort that was interested in**  
204 **computing?**

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T: There were a couple of males, but the only female math student that I was friendly with actually was not that interested in computing. So I was kind of this loner.

**B: Then, what happened at William and Mary? What was that experience like?**

T: So at Michigan State I should add, since we are on this subject; there were not a lot of female faculty at Michigan State, either, and the people that I hung out with were all men.

**B: Did you notice that?**

T: I liked it. [laughter] I was very ‘popular’. I did notice that and I wish there had been more women, but I think that my brother and I when I was growing up (he was only a year older than me) and so he always had boys around, so I felt very comfortable in a boy environment. My brother, was, is, much more popular than I will ever be. I was just one of the guys, so I always felt comfortable. So I noticed it, but it didn’t put me off. Looking as I was growing up, my mom was awesome in encouraging me on to school and what not, but when I consider all my role models, so many of them throughout my education were male. Even at William and Mary there were not; there was a female instructor, but not a female faculty member.

**B: Colleagues?**

T: So there were female students at William and Mary. In fact one of my really good friends developed there, Laurie King, whom you know, Barbara. She and I met shortly after I got there. She was already there when I arrived and we became pretty tight. She’s a fabulous person. So besides her, it was a whole lot of guy friends, not a lot of women.

**B: So talk about the faculty that influenced you, or the ideas that influenced you at William and Mary. What do you think was some of your back up, shaped your later choices?**

T: To become a professor?

**B: Whatever.**

T: So there were many faculty members that I think had a huge impact on me, two in particular that had an impact on me when I was at William and Mary. One was Keith Miller, whom you also know; he’s been a mentor of mine for years. He was a faculty member at William and Mary when I first joined there. The other one was my advisor, Phil Kearns, and I chose Phil as my advisor, pretty much because he was the coolest faculty there. I don’t think I had these long term plans of being where I am today, it just I was ...

**B: What kind of courses influenced you?**

T: So I liked the systems courses. During my master’s my focus was on AI; I think a lot of women were drawn to the AI field. And so my focus during my master’s was on AI. And when I went to William and Mary the thought was that I would do a PhD in AI; but I didn’t really hit it off with the AI faculty member and I was very interested in the systems course; again, because it was so logical and I am such a logical being, my whole being is logic. Even my kids, we raise them with love and logic. That’s just who I am.

256 **B: So you are finishing up at William and Mary.**

257

258 T: I just want to remark on one thing that happened when I was at William and Mary (that I  
259 think had a huge influence on where I am today) was I heard about the Sisters list while I was at  
260 William and Mary. I joined in -- I think I joined in '91 or '92. It had only been around for less  
261 than a year. It proved to be huge, a huge part of my life, being part of that list and being part of a  
262 women in computing community, realizing all of a sudden I had been surrounded by men. I  
263 hadn't given that much thought. I felt comfortable in that environment but I hadn't given it  
264 thought about why there aren't more women here. And what can we do to get more women here?  
265 I didn't ask those questions until I joined the Sisters list and I started hearing other people ask  
266 those questions. Then realizing you know what, this is ridiculous. It would have been nice to  
267 have more women through all these years of education.

268

269 **B: So you finished your PhD, your dad –**

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271 T: They were thrilled, they were thrilled. So the logical step was to go into academics.  
272 With a PhD the choices were research in a lab or a university. My advisor advised me; I mean I  
273 wasn't thrilled about research. I enjoyed it, but it wasn't a driving passion of mine. But he  
274 advised me and I think it was good advice, to try to get a position at a research university because  
275 if I decided that a research institution wasn't for me I could always then look at other teaching  
276 institutions. It is really hard to go the other way down that path. And so I applied to several  
277 places, I think over 50 because the job market in 1993 was very tough, tight. I applied to a lot of  
278 places, went on four interviews, and then the offer from the University of Alabama came. Here's  
279 where I got really bad advice. I'm not saying who gave me this advice, but someone said to me  
280 "well, you should take it because it is unlikely you'll get another offer from a research institution,  
281 so within two weeks I had to turn down ten other interview offers from places I would have  
282 enjoyed visiting, looking at and considering. So that turned out to be unfortunately one piece of  
283 advice that I really wish I had not taken. But so I went to the University of Alabama for a few  
284 years.

285

286 **B: What were the good things about being there?**

287

288 T: The good things were – there was a female faculty member there. That was nice.  
289 William and Mary actually hired a female faculty member as I was leaving and today, actually,  
290 William and Mary has a lot of female faculty members. So that is nice since they turned around  
291 from their all male environment. So Alabama had a female faculty member there. My husband  
292 and I also really enjoyed the sports at Alabama.

293

294 **B: When did the husband come into this picture?**

295

296 T: He wasn't quite my husband then but he finished his master's at William and Mary and  
297 moved down to Tuscaloosa, Alabama with me and he was actually an instructor in the department  
298 for a couple of years. He decided to get a PhD so he went to Georgia Tech, and we did a year  
299 commuting -- three hours, that wasn't so bad, a three hour drive. But then he decided he didn't  
300 really want my job, and so getting a PhD didn't seem to be what he needed in his future; he  
301 wanted to get into industry and check out some computing type jobs in industry and Tuscaloosa,  
302 Alabama didn't have a whole lot of opportunities, so we came to the Denver area. So the sports  
303 at Alabama, that was the highlight of my time at Alabama. Roll Tide, roll! We went and saw the  
304 women's basketball team, the women's gymnastics, the male, their baseball team. We had season  
305 tickets to a lot of the sporting events. That was by far the highlight on a personal note. But as far

306 as professionally, I think I did well there. I earned a career award while I was there, which was  
307 nice.

308

309 **B: I see from your resume that you are very prolific in research, in service to the**  
310 **academic community. Did that start at Alabama?**

311

312 T: I actually gave a talk recently. I was asked to give a keynote talk at a conference, a  
313 women in computing conference. They asked me to talk about how I do all that I do, because I  
314 do have my foot in two fields. I have my technical research program which is in ad hoc  
315 networking and I have my women in computing efforts that I do. I do a lot of service in both  
316 communities; I have grants in both communities.

317

318 **B: Did that start at Alabama?**

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320 T: It did start, but I wasn't that successful initially. I did write the "Incredible Shrinking  
321 Pipeline" paper which became a paper that has been very widely cited. I don't think that ... I  
322 wasn't the first person to note that we had this drop in percentage of women in computing. I  
323 think I was the first person to give it a cool title. I truly believe that is one of the reasons I get  
324 cited so much for that is because I gave it a cool title, a title that my husband helped me create.  
325 Because my husband, I remember, he said "Wasn't there a movie about the incredible shrinking  
326 woman?" And I went "Incredible shrinking pipeline, that's it!!" You always have to have a good  
327 title. Good titles are so important. So I did write that paper when I was at Alabama. I was  
328 involved in Systems and I was asked to be chair of ACM-W, so I did have my feet in both fields  
329 then.

330

331 But at the time I think I was more successful in my women in computing efforts than I was in my  
332 technical efforts. I really struggled initially technically. I was the only networking faculty  
333 member at Alabama at the time. I didn't have a mentor to help me learn how to write research  
334 proposals. My advisor had never shown me how to do that, and I floundered for several years.  
335 Almost to the point when one year I actually did apply to several teaching institutions thinking  
336 that maybe this research stuff wasn't for me. I certainly didn't have much confidence which I  
337 would like to talk about at some point during this interview.

338

339 Seriously, I almost considered giving up on the technical aspects. Then NSF gave me this  
340 \$17,000 research planning grant award. Now dollar-wise, it was insignificant. Confidence level  
341 it was huge. It was huge to get this tiny little award and so the next year when I applied for a  
342 career grant. (This was my fifth year applying, I'd been rejected the previous four, which they no  
343 longer allow, I might add.) In my fifth year I completely switched topics and completely threw  
344 out everything I had done before and did something completely new and it worked. I was  
345 awarded the career award and suddenly realized that I had been trying to do research that I had no  
346 passion for and I moved into a new field that I got very excited about, that I thought could  
347 potentially have an impact on the world. My previous research did not have much impact at all,  
348 and so the passion wasn't there. My advisor, if I dare quote him, called that type of research  
349 "intellectual masturbation." – without a lot of impact. The passion for me was just not there, so  
350 switching research topics was a huge step in the right direction and I became very successful at it.  
351 But it took me a long time to get to that point.

352

353 **B: You were still at the University of Alabama when you got this career grant.**

354

355 T: Yes, I received the career award the year before I left.

356

357 **B: So that made you more saleable as you looked at your possibilities.**

358

359 T: I think it did and when I went looking at jobs, at the time the faculty market was really,  
360 really good to be moving. This was in 1998. We went from 500 applications down to 75. So it  
361 was a very good time to be looking for a position. So I only applied to three universities and  
362 ending up saying no to one interview offer. I was very, very selective. What I was looking for  
363 was a university that had a PhD in computer science and that was a small university. My goals  
364 were just a better fit with the small university than with the larger. I went to small K College,  
365 large Michigan State, small William and Mary, large Alabama and now I am here at the Colorado  
366 School of Mines, a small university again. My husband and I miss the sports immensely.

367

368 **B: I was going to say, the sports.**

369

370 T: Yes, our sports team is nothing to write home about, so we do miss the sports, but other  
371 than that I prefer being at a smaller university. So yes, I was very selective in where I applied and  
372 fortunately I was offered this position and it was a good fit for my husband because we had  
373 Denver and the IT market. So I actually received the offer and accepted it within 24 hours. It  
374 wasn't something I gave a lot of thought to.

375

376 But anyway, back to your original question. When I created this keynote for this talk in  
377 Australia, I mapped out my career and over twelve years of my career I was able to ... I had a  
378 chart showing the difference between my success my first six years versus my successes my  
379 second six years. It's just mind boggling. I had to learn how to be successful and it took me six  
380 years to do it.

381

382 It is one thing. I try to mentor our junior faculty. I really struggled because I didn't have mentors  
383 as a young faculty. That is one of my goals today. I have a mentoring plan with several junior  
384 faculty members, so they don't have to go through the same trial and error process that I went  
385 through.

386

387 **B: Do you want to speak more about the confidence thing?**

388

389 T: Yes. This is something else I talked about in my keynote that I learned about recently  
390 and boy did it hit home. It's called the Imposter Syndrome. Have you have heard about this?

391

392 **B: Yes, I have.**

393

394 T: Oh, my gosh! I was thrilled when I first heard about it. I just learned about it a couple of  
395 years ago. It just struck home for me. I am definitely an imposter at this job. I've been an  
396 imposter my whole life and when you look at the checklist of who are potential imposters, I can  
397 check many of them. I'm a first generation professional; my parents were blue collar. I'm in a  
398 field that is heavily dominated by men. There's many ... I can check. So I'm a huge imposter.  
399 Remember when I was accepted at Kalamazoo College and actually went to Kalamazoo College,  
400 a little voice inside my head said that I was a test case. "Let's take this idiot girl from the  
401 backwoods and put her in this environment that is very intellectually stimulating with a lot of  
402 smart people and let's see what happens." I really felt this ... I knew intellectually, obviously,  
403 that this wasn't the case.

404

405 They don't have these types of scientific studies to see what you can do in that type of situation,  
406 but a little voice, you know sometimes, would raise up, "You know you don't really belong here,  
407 and you are just a test case", which is very silly, but that is how I felt when I was there. And I

408 have carried that with me my whole life. I definitely feel like an imposter. So learning about the  
409 Imposter Syndrome was huge ... was HUGE. And so now I tell everybody that I possibly can  
410 about the Imposter Syndrome. Whenever I give a talk on women in computing or successes or  
411 whatever, I try and fit in the Imposter Syndrome and ask for a hand show and always 75% of the  
412 room raises their hand. So I think it is really good to know about the imposter syndrome because  
413 then you can start dealing with it and learning to be more confident. So, yes, confidence has  
414 always been something I've had to struggle with. I'm not nearly as successful as my record  
415 indicates.

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417 [Both laugh.]

418

419 **B: So you haven't been successful in getting rid of the Imposter Syndrome.**

420

421 T: Still there.

422

423 **B: You talked a bit about your mentoring philosophy, and the importance of**  
424 **mentoring and somewhat about research – that you need a passion for research, how about**  
425 **you teaching philosophy?**

426

427 T: Yes. So it turns out that I love to teach. When I was in the PhD program I thought the  
428 last thing I would want to do is be a teacher. I didn't have that driving urge that some people  
429 have to be a teacher, but I actually do love the job. I really do love the job. So my teaching  
430 philosophy is I spend a lot of time on my classes to try and make them interesting, to try and  
431 show them the big picture and the little details. My classes are very collaborative type classes; I  
432 don't stand up at the board and lecture for 50 minutes or however long your class is. We do a lot  
433 of group work and the students have to respond to numerous questions after they have talked to  
434 their partners and what not. So I don't think that I am the best teacher; I haven't put all my focus  
435 on teaching. Because I also have the research that I love to do, but in general I am better than the  
436 average teacher.

437

438 **B: What have been your favorite courses to teach? You indicated like that might**  
439 **change.**

440

441 T: I have been – when I was at Alabama ... how many years have I been here? My first six  
442 years at Mines, the only classes I taught were senior level classes or graduate level classes. I  
443 didn't teach any lower level classes. Partly that was due to we just didn't have the resources here  
444 at CSM, my university, to have faculty teaching lower level, just didn't have faculty to do that.  
445 We've known for years that we have wanted a faculty member to take a look at our first  
446 introductory programming course. We've wanted to do that for years. So during my sabbatical  
447 I realized that I wanted to do something different and it seemed like a good fit to go down there  
448 and try to make a change, especially with the drop in student enrollment ... if there is anything  
449 we can do to try and improve our enrollment.

450

451 **B: So you mentioned down there –**

452

453 T: Down there in the lower level. It's a fun class to teach; it's a very different class to teach.  
454 You learn what concepts trip students up, concepts that in the past I have always assumed my  
455 students knew in the upper level ... you quickly learn about these students so it has been fun.

456

457 **B: Do you have any favorite stories about that?**

458 T: Favorite stories? I have only been teaching this course for about two semesters now, so I  
459 am a newbie at it. I certainly like, I can think of several students, who have come to me and said  
460 that that course has made them interested in computer science as a career option, or as a major or  
461 a minor. I can think of six students off the top of my head that have come to me outside of class  
462 to talk about majoring or minoring in computing. I treasure those memories because part of the  
463 reason why I love my job so much is that you can have such an impact on someone's life,  
464 encouraging them to do this or that – the papers, the research, the grant proposals, whatever. I  
465 treasure those memories that remind me that the reason I am in this job is because of the impact  
466 you can have on people's lives. I think back to some of the faculty members who had such a  
467 huge impact on my life and now knowing that there are some people out there that when they  
468 think back, they think of me and that is pretty cool.

469

470 **B: Another part of your life (you mentioned you were part of ACM-W and Systems).  
471 What other professional organizations are you part of?**

472

473 T: My main research organization is SIGMOBILE, ACM's Special Interest Group in Mobile  
474 Computing and Systems. I am the treasure of that group currently, taking care of the budget and  
475 the in-cooperation requests. It is amazing how many "in cooperation with" requests we get for  
476 SIGMOBILE. It's just amazing. I am pretty heavily involved in that community as well. Again,  
477 I have my foot in two communities. I do service work for my technical community and I do  
478 service work for women in computing efforts.

479

480 **B: Is it a symbiotic relationship in that the service work aids your career and vice  
481 versa?**

482

483 T: That is actually a question they asked me to address in Australia, was how the two either  
484 help or hurt each other. Having my foot in two communities has hurt me in that I work a lot.  
485 Fortunately I have a lot of energy but I work a lot more than many of the men that surround me, a  
486 lot more. So that is unfortunate, especially now that I have young children, that I haven't figured  
487 out how to back off on either of the communities. I can't give up either in my opinion, so I don't  
488 know how to back off on that.

489

490 **B: You're leading right into the next question. The next question I had is, what were  
491 the major challenges you had in balancing your personal, professional lives?**

492

493 T: I do have some tips on that, Barbara we can get to. Getting back to the pros. I think the  
494 two communities have helped me because when I write a technical research proposal I always  
495 have a piece that includes women in computing ... always ... I always fit it in. With NSF's  
496 broader impact criterion and their evaluation, I always score very high on that because I'm not  
497 just using the words. I read so many proposals "and we will recruit women and minorities." And  
498 I think "Why ... you haven't done it in the past, what makes you think you are going to do it  
499 now; how are you going to do it?" I actually have a lot of efforts in that area, so I am taken  
500 seriously. So I think my research proposal, I have helped get some of my research proposals  
501 funded because of the women in computing piece associated with it. But I also think the other  
502 way, some of the women in computing things I do, some of my research has helped me, I think I  
503 am taken seriously because I have this very strong research program. So I think the two have  
504 helped each other, and my research proposals bring in some money to help with my women in  
505 computing efforts, you know. So I think the two have helped each other. But the biggest  
506 challenge is, as you mentioned, is the time, because you have service in both areas, you have to  
507 keep up with the literature in both areas, networking in both areas, travel to the conferences  
508 associated with both areas. I mean it's almost as if you have two jobs.

509

510 **B: It is almost as if you have a third one, because if you are going to focus on**  
511 **introductory computing that is another issue.**

512

513 T: I know. I actually was involved in SIGCSE way back in the mid-nineties and I gave that  
514 up realizing I couldn't do three communities, so you are right. You are totally right.

515

516 **B: So do you want to talk about juggling the family?**

517

518 T: Right, so here's my new ... this is again, I feel like I am giving my keynote address,  
519 because they asked me to talk about how do you overcome these challenges. For me, there are  
520 several things that I think have really helped me. One is my husband got me a book called *How*  
521 *to Say No Without Feeling Guilty*. I wish they had a Cliff Notes version of the book because you  
522 have to wade through a lot of crap to get to the diamonds, in my opinion. But two things I took  
523 away from the book is that one when I get asked to do something professionally, the person who  
524 is asking me just wants to have a job done. They don't care who does the job, they just want the  
525 job done and they want it done well. So if you can give them somebody else who can do the job  
526 and do the job well, there's not going to be any hard feelings because all they want is their job  
527 done. They don't care if you do it, just so someone does it. I am able to say no to a lot of  
528 professional requests much easier now because I say no with a suggestion of who can do the job  
529 and do it well. And sometimes I'll give two or three suggestions just in case they get no on their  
530 next request. So I have found that helped me to say no professionally a bit more.

531

532 But also the book talked about social requests, you know, social invitations. We have such little  
533 free time in this world that you really ought to step back and think about the social invitation and  
534 whether that invitation or that event will give you energy. If it will draw energy then don't go.  
535 All you have to do is "Wow, that sounds like a lot of fun, unfortunately I already have plans."  
536 You don't have to explain what your plans are; your plans are to take your kids to the park. Who  
537 cares? Your plan could be to take a hot, bubbly bath. So both those tips have helped me to say  
538 no a little easier. My husband gave me that book a while ago.

539

540 The second thing that helped me is that I heard about a book this woman wrote about the four  
541 D's. I don't know if you've heard of this: delay, delegate, diminish, or delete. She said that for  
542 everything you have on your to do list, if you need to find some time, you ought to try to find one  
543 of these D's to use: Delete: maybe it is not all that important and it'll be okay. Delay: maybe it  
544 doesn't need to be done this week; let's push it back for a couple of weeks. Diminish it: maybe  
545 you don't have to do the A+ job on it, maybe you can do the B- and that's good enough. Or  
546 delegate. And I'm the queen of delegation. I delegate a lot of stuff to my students which helps  
547 me be even more productive. So, yeah, I live by those four D's.

548

549 **B: You were telling me something about your workday schedule, how you allocated**  
550 **time. Do you want to talk about that? That you have days for yourself and how you**  
551 **manage the week?**

552

553 T: Yeah, so one thing that I learned a long time ago in some presentation by somebody  
554 smart. I get a lot of tips on how I live our life through the top women in our field. I don't know  
555 if you've seen many people talk like Jan Cuny, Mary Lou Soffa, and Janie Irwin and Anne  
556 Condon, you listen, I've heard many of them talk several times and live my life by their very,  
557 very, smart advice. So one piece of advice I took away from one of these lectures was to be real  
558 organized (I'm real organized with my to do list.) and then schedule your time, what you are  
559 going to work on when, for your week. So I have my very, very large to do list. So at the

560 beginning of the week, I figure out what are the highest priorities for that week. Then those are  
561 the ones that I focus on for that week. As far as scheduling, my life: my husband and I just  
562 started as of January, a new schedule where Thursday is my day to be the stay at home mom and  
563 he works, and I work on Saturday. So we do a six day a week schedule. I really like that  
564 schedule, so Thursday then I can be involved in all the kids' activities. So every Thursday I  
565 volunteer at one or the other of my children's schools for a couple of hours and then I get to cart  
566 them to tennis practice, or you know, whatever those things. I really enjoy my Thursdays. That's  
567 a new thing we started this year and it really works well for our family. And I also find that I can  
568 get more done on a Saturday than on a Thursday, because there are less people around the office.  
569 So often on Saturday I can go home by two o'clock in the afternoon. I don't have to put in that  
570 full day. Another thing that I think has worked well for me throughout my whole life is that I  
571 don't sleep that much. I can get a lot of work done before my kids get out of bed. So I do that as  
572 well.

573

574 **B: Do you have outside interests outside of computing and women in computing and**  
575 **your children?**

576

577 T: I have lots of interests. Do I have time at present to partake in any of them? No. My  
578 kids are Emma is almost four, 3 and  $\frac{3}{4}$ , and my son just turned 7. At the present time, Mommy is  
579 really cool and they like spending time with Mommy and so I am there. Some day they are not  
580 going to want me so much and I can get involved in the things that I really, personally enjoy  
581 doing on my own. But right now, as long as my kids want me around, I am going to be there.

582

583 **B: You are really leading into what my next question is. You are mid-career. I would**  
584 **consider you a young to mid-career person. Where do you envision yourself (you have had**  
585 **12 to 13 years in the field), where do you see yourself 12 to 13 years from now?**

586

587 T: That's a good question and I have done a lot of thinking about that the last year and a  
588 half. That is a really good question, Barbara. Personally I don't have answers. One thing I  
589 definitely ... I'm a full professor now as of just a few weeks ago ...

590

591 **B: Congratulations!**

592

593 T: Thank you. My husband said to me, "You know, maybe it is time to get off the treadmill  
594 and enjoy the view." I feel like I have just been racing up the tenure track ladder and then up to  
595 full professor, and having lots of students and getting lots of money and writing lots of papers and  
596 I feel like I have been in this race to succeed. So for the last year I have scaled back a little bit,  
597 trying to figure out, where do I want to be? I actually think, first of all, I am switching research  
598 directions once again. I am going to head into using sensor networks for the health community.  
599 So that is a pretty big switch, so I'll be doing a lot of reading this summer. Again, what is driving  
600 me is that I no longer have a passion for my research I've been doing. I don't see the impact that  
601 it will have on the world anymore. For me I have to have ... I have to see potential impact, so  
602 anything we can do in the health world, especially as our population is aging, and the whole baby  
603 boomers are becoming senior citizens. So I am switching my research career. I have already  
604 formed a couple of collaborations with people and starting to think about what my first proposal  
605 will be. I am also going to do less just trying to get the money and more what do I want to work  
606 on.

607

608 So I think I am going to do more women in computing and more education. I actually have two  
609 projects for middle school kids that I am getting involved in that I am kind of excited about, just  
610 doing something different. I am doing a really weird networking project at the Richard Tapia

611 conference, at least I am hoping to get the funding to do this project that will be kind of fun to  
612 help with the whole networking informing a strong community at Tapia and if that goes well,  
613 we'll do it at Grace Hopper the next year.

614

615 So my big thing now is I am really thinking about the impact and the passion and if I can't see  
616 both, I'm not getting involved. I have a couple of grants that were more about some interest, but  
617 mainly about just bringing in the money. I am no longer going to do that.

618

619 **B: That kind of moves into the wrap up part. You've done it throughout the interview,**  
620 **but I am still going to ask it. If you're going to give advice to a young woman just starting**  
621 **out, what would be the major thing you would say?**

622

623 T: I think as far as getting into computing, it is a fabulous career to get into. There are so  
624 many opportunities -- there are lots of opportunities for women in computing and there are lots of  
625 companies out there that are very aware of how important it (diversity) is. Computing women  
626 professionals earn 97 cents on the dollar compared to the males which is one of the best fields. In  
627 general, women earn 70 something cents on the dollar, whereas in computing it is 97 cents. So  
628 we are almost equivalent. I think the reason why women do so well in this field is because  
629 computing is such a young field, a lot of new way of thinking in a sense that there is not a lot of  
630 discrimination there which I think is good, in industry anyways. So there are tons of  
631 opportunities; there are so many types of jobs you can get involved in. There is the opportunity to  
632 work part time if you want to put more of a focus on the family. There is an opportunity to work  
633 part time in a lot of companies. I think that the coolest thing about computer science is that if you  
634 like to learn, you continually learn in computing. For me that is a huge draw because I love to  
635 learn.

636

637 **B: How about going into computing education and academia? What would you say to**  
638 **women about academia as a career path in computing?**

639

640 T: I kind of stumbled into it. I love my job. I think I have the best job in the world. I get to  
641 work on what I want, when I want. I set my hours almost completely for myself. I can work a lot  
642 one week, very little the next week. My daughter had surgery last week; I took practically the  
643 whole week off without giving it a second thought. It is very flexible, the type of job that we  
644 have. I love my job. I get to travel; I get to meet interesting people. I really love my job.

645

646 **B: Thank you. Is there one last closing story that you'd like to tell, so that people**  
647 **would remember it?**

648

649 T: I think most women in male-dominated fields are there because of encouragement from  
650 somebody ... in my case multiple people. In my case a lot of that encouragement came from  
651 male professors. I think there are situations, there are times, when you might be told something,  
652 hear something, that might make you consider not to press forward, I think. Because there was a  
653 time when I didn't think this job was for me at all. But I think that if you just keep moving  
654 forward you can find that job that you really love. If you currently have a job that you don't  
655 really, really love, well then go look for a new job. There are so many jobs out there that you can  
656 find a job that really sparks your passion that you enjoy tremendously, and don't quit until you  
657 find it. Give computing a try because I think for a lot of people with the logic, the mathematical  
658 interest, this is a great field to be in.

659

660 **B: Well, thank you for your time, Tracy. As you can tell, anybody listening can tell**  
661 **how much you have on your plate and we really appreciate your giving the project the time.**  
662 **Thanks.**  
663  
664 **T: No problem.**