Barbara Boucher Owens: This is an interview with Tracy Camp from Colorado School of Mines, conducted by Barbara Boucher Owens. This interview is being recorded on the 29th of May, 2007, at Golden, Colorado, in the United States. It’s part of the Computing Educators Oral History Project. Now did we give and pronounce your name correctly?

Tracy Camp: Yes, you did.

B: Good. All right, we’re going to start way back when. All right?

T: OK.

B: We’re going to start with your parents. Did either of your parents have college degrees?

T: No. Neither one. My father has an eighth grade education, actually. And so for him, having a daughter that not only graduated from college, but went all the way to a Ph.D. was an immense pride for him.
B: Were either of them in any kind of computer-related or math-related fields, like science or engineering?

T: No, my dad was blue collar, definitely blue collar. His parents — his father died when my dad was very young and then his mom went blind. And he had nine sisters; he was the only male. So basically he fended for himself from about the time he was 12 or 13, which is why he had to leave school and get a job and, you know, take care of himself. So he’s a mechanic. He was a carpenter for several years. He worked on swimming pools for several years. But no, nothing computer-related. But he does have a very analytical, logical mind, which I think I inherited that from him.

And then my mom has a high school education, considered going to college but decided getting married and having kids would be more fun, I guess. And she was a secretary and then slowly moved up the ladder and became the office manager for the company she worked at.

B: Were you a good student?

T: Yeah, I was always a good student until senior year of high school. I kind of fell apart when I came of age or … you know. I don’t know exactly what happened, but I was a pretty good student up until that point. And then took a year of kind of being a rebel and not doing the right thing. And then got my act back together and went on to college.

B: Well, in high school did you take courses in math and science that prepared you for studying engineering?

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

B: Well, did you have siblings who went on to college and professional careers?

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

B: What kind of career has he had?
T: Well, he started working in a blue-collar type company, for a steel mill. But then my parents actually started their own swimming pool company that has grown and grown and grown. And my brother now is about to take that over. It’s … I think last year their sales was $5 million or something like that. It’s a huge company, now, that my dad started — I actually helped him start one summer, years ago, and then worked there for several years during my summer vacations during school. And it slowly has grown and my brother has taken it over. Yeah! So that’s what he does. He leads this big company.

B: Cool! Was there somebody in your early life that was a shaping influence, like a teacher or someone that served as a mentor?

[4:55]

T: I had several teachers. I think that’s true of many women in male-dominated fields is, you have to have some people that offer you that extra encouragement to continue and I can name several.

I remember my sixth-grade teacher was a huge influence because he was the one who took myself and a couple other students aside and let us just go on with math instead of just following the … you know, the traditional path. So he was an influence.

I remember a teacher in high school, another math teacher — both males — who were a huge influence to continue … encouraging me to continue with math and moving forward with math.

And then, as far as from my family, my Uncle Dave was a huge encouragement as well, because he was one person in my life who actually had a college degree. Nobody else I knew had a college degree. So he was my role model of just knowing someone personally that had a college degree. That made me think, “Well, maybe I could do that as well!”

[And of course, I had unbelievable encouragement from both my parents that I could go to college and get a college degree.]

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

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

B: Which was?

T: It was Ferris State University in Big Rapids, Michigan. I went there a year and realized that I was ready to work and learn some things that I didn’t already know. And so Ferris wasn’t quite for me.

And so there was a faculty member there, a math faculty member, male — again — who suggested I apply to Kalamazoo College. And my initial reaction to that was, “There’s no way Kalamazoo College will accept me!” — ’cause that’s a small prestigious liberal arts
school in Michigan, a private school, and I thought there was no way they would accept me. My mom said, “Well we won’t know unless you apply.” And I was like, “Well Mom, I think we’re throwing our application fee away.” And we didn’t have a lot of money when I was growing up. It was — you know, we lived week-to-week. My dad actually worked two jobs a lot of my childhood just to … we didn’t have a lot of money. So to me, you know, spending whatever the application fee was, $15 or $20, to me just seemed enormous. But my mom insisted, “No, let’s apply and see what happens.” And I got in and went for a visit and saw a lot of very dedicated, hard-working students and thought, “Yes, this place looks like maybe I could fit here.”

B: Hmm. Well, tell us a little bit about your undergraduate experience. I mean, it obviously was a good fit.

T: Mmm hmm.

B: Were there key events or people that you want to bring up, subjects …?

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

[10:00]

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

B: So you decided something was … influenced you to go on to graduate school.

T: Right. So Kalamazoo College did not have a computer science program, nor a computer
science degree. They had a mathematical program that had some computing classes. So my
undergraduate education is actually in mathematics. And during my senior year, when I took
their math comprehension exam and when I looked at my career options — which basically
seemed to be actuary type of positions — I thought that I wanted to do something different.
And computing was a draw for me because of the logic. I’m a very logical person, so
computer science was a huge draw for that. So I thought, “Well, I don’t really want to be a
mathematician when I grow up, so I am going to go on and get a Master’s in computer
science and get trained in a different field, and then get a job.” That was my plan.

So I went to Michigan State University, their Master’s program at Michigan State. And the
ting about that particular program was they had a couple classes that were for students
like me, that were focused on the details that I hadn’t picked up in my undergraduate
education. So I had, I think, two classes that did not count towards my Master’s degree, that I
needed to get up-to-speed with the other students who had undergrad degrees in computing.

B: So had you had any computing at Kalamazoo?

T: At Kalamazoo College I think I had three classes [in computing]. I think I had Pascal, I had a
data structure class, and then I had a numerical computation-type class. And that’s all I recall.
Many of their math classes had programming projects associated with them, but those were
the only “official” computer science classes that I recall taking.

B: Was that Michigan State [program] a Master’s thesis?

T: A Master’s non-thesis.

B: Then what happened next?

T: So then when I was finishing my Master’s, thinking about industry, the job market in 1987
wasn’t all that great. And [my parents got it into their heads that I ought to get a Ph.D. I
thought both of them were crazy]. But [my dad] thought — to him, you know, never having
education as an opportunity, to him, seeing me go all the way was just huge. So he really
wanted me to do that. And so the job market wasn’t all that great. And my parents — I kid,
but I think it’s partly true — they bribed me to go get a Ph.D. They bought me a Trans Am
and said, “You can have this car if you go on to get a PhD.” Or you go to … it wasn’t to go
on to earn a PhD; it was to go to a university in a Ph.D. program. So at the time my plan was
to take the car and go for a year and then see what other opportunities might come my way,
was my plan. But a year went into two years. And then two-and-a-half years. And then,
pretty much, I was like, “Well, man, I’m so close, I might as well just finish.” Getting a …
earning a Ph.D. and becoming a professor was never in my long-term plan.
B: Well, tell me about how you chose the institution for your Ph.D.

T: So I wanted to leave Michigan …

B: With your Trans Am?

T: With my Trans Am, yes. [both chuckle] Definitely took the car with me. So I wanted to leave Michigan because I had lived there my whole life, besides the six months in France, and I knew there were a lot of other, you know, things to see. But I wanted to go to a small school. I enjoyed the environment at Kalamazoo College — which only has a couple thousand students — way more than the environment at Michigan State — which had 55,000 or 35,000 [students] or … a number too large to even comprehend. So Ph.D. in computer science, small school, there were not a lot of choices. College of William and Mary is one of them that I applied to. And I was accepted and was offered a teaching assistantship. And so off I went!

B: Well, did … I haven’t heard of any female mentors at Kalamazoo?

T: Nope. There were no female mathematicians when I was there.

B: How about colleagues, students? Was there a cohort that was interested in computing, or were you …?

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

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

T: Yeah. 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.” Yes, 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, I think, than I will ever be. And so I was just always “one of the guys.” And so I always felt comfortable with that. So I noticed it, but it didn’t put me off. And looking … as I was growing up, I mean, my mom was awesome in encouraging me on to school and what not. But when I consider all my role models … You know, so many of them throughout my education were male. And even at William and Mary there were not … there was a female instructor, but not a female faculty member.

B: And how about colleagues?
T: So there were some female students at William and Mary. So that was nice. And, in fact, one of my really good friends developed at William and Mary, Laurie King, whom you know, Barbara.

B: Sure!

T: Yeah! 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. And so … but besides her, again, it was a lot of … I had a lot of guy friends, not a lot of women.

B: Well, then, talk about the faculty that influenced you or the ideas that influenced you at William and Mary. What do you think was — when you look back on it — shaped your later choices?

T: To become a professor?

B: Whatever. Yeah.

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

B: What kind of courses stimulated you?

T: So I liked the systems courses. During my Master’s my focus was on AI — which I think a lot of women were drawn to the AI field. And so my focus during my Master’s was on AI. And then when I went to William and Mary, the thought was I would do a Ph.D. in AI. But I didn’t really hit it off with the AI faculty member. And I was very interested in the systems courses. I think, again, a lot of it is because it’s so logical. I mean, I’m such a logical — my whole being is logic. Even our kids — we raise them with love and logic. You know, so that’s just who I am.

B: So you’re finishing up at William and Mary.

T: Well, I do want to just remark on one thing that happened when I was at William and Mary that I think had a huge influence on where I am today — is I heard about the Systers list when I was at William and Mary. And it was a pretty new list. I joined in … I think I joined in 1991 or 1992. And I think it only had been around for less than a year. And that proved to be a huge … a huge influence on my life, being part of that list and being part of a women-in-computing community. And realizing all of a sudden, “Wow! I’ve been surrounded by men!” but hadn’t really given that much thought.
B: Hmm!

T: I mean, I felt comfortable in the environment, so that certainly didn’t bother me at all. But I didn’t really give it a lot of thought, of “Why are there not more women here?” And “What can we do to get more women here?” I didn’t ask those questions until I joined the Systers list and started hearing other people ask those questions. Then realizing, “You know what, this is ridiculous!” It would have been nice to have more women through all these years of education.

B: So you finished your Ph.D. Your dad …

T: Yes! So they were thrilled, they were thrilled. And so then the logical step was to go into academics. With a Ph.D. the choices were a research lab or a university. My advisor advised me — I mean I wasn’t thrilled about research; I enjoyed it, but it wasn’t a driving passion of mine — but he advised me, and I think it was good advice, to try to get a position at a research institution. Because if I decided a research institution wasn’t for me, I could always then look at other teaching institutions. But it’s really hard to go the other way down that path.

And so I applied to several places, I think over fifty, because the job market in 1993, for finding faculty positions, was very tough … tight. So I applied to a lot of places and went on … I think four interviews — when the offer from the University of Alabama came. And here’s where I got really bad advice — so I’m not going to say who gave me this advice — but someone said to me, “Oh! Well, you should take it, ’cause it’s unlikely you’ll get another offer from a research institution.” So I took the offer and within two weeks I had to turn down ten other interview offers of places I would have enjoyed visiting, and looking at, and considering. So that turned out to be, yeah, unfortunately, one piece of advice that I really wish I had not taken. But … yeah! So I went to the University of Alabama for a few years there.

B: What were the good things about being there?

T: The good things were … there was a female faculty member there. That was nice. William and Mary actually hired a female faculty member as I was leaving. And today, actually, William and Mary has a lot of female faculty members. So that’s nice; so they’ve turned around from their all-male environment. So Alabama had a female faculty member there. My husband and I really enjoyed the sports at Alabama.

B: The husband … when did the husband come into this picture?

T: Well, he wasn’t quite my husband then. But he finished his Master’s degree at William and Mary and then moved down to Tuscaloosa, Alabama, with me. And he was actually an instructor in the department for a couple of years. Then he decided to get a Ph.D., so he went to Georgia Tech. So we did a year, you know, commuting — it’s three hours, so that wasn’t so bad, a three hour drive. But then he decided he didn’t really want my job [laughs], and so getting a Ph.D. didn’t seem to be what he needed in his future. And he wanted to get into
industry and check out some computing-type jobs in industry. And Tuscaloosa, Alabama, didn’t have a lot of opportunities. And so we came to the Denver area.

So the sports at Alabama, that was like a highlight of our time at Alabama. Roll, Tide, roll! We went and saw the women’s basketball team, the women’s gymnastics, the male … their baseball team. We had season tickets to a lot of the sporting events. That was by far the highlight on a personal note. But as far as professionally, I think I did well there. I earned a [NSF] CAREER award while I was there, which was nice.

B: Well, I see from your resumé that you’re very prolific in research, in service to the academic community. Did that start at Alabama?

T: Now, I actually gave a talk recently. I was asked to give a keynote talk at a conference, a women in computing conference. And they asked me to talk about how I do all that I do, because I do have my foot in two fields. I have my technical research program, which is in ad hoc networking, and then I have my women in computing efforts that I do. And I do a lot of service for both communities; and I do research in both communities; I have grants in both communities, so …

B: Did that start at Alabama, or when did it start?

T: It did start, but I wasn’t that successful initially. I mean, I did write the “Incredible Shrinking Pipeline” paper, which became a paper that has been very well cited. I don’t think that … you know, I wasn’t the first person to note that we had this drop in percentage of women in computing. I think I was the first person to give it a cool title. And I truly believe that’s one of the reasons why I get cited so much for that, is because I gave it a good title, a title that my husband helped me create. Because my husband, I remember, he said, “Wasn’t there a movie about the incredible shrinking woman?” And I went, “Incredible shrinking pipeline, that’s it!!” You always have to have a good title. Good titles are so important. So I did write that paper when I was at Alabama. And I was involved in Systers. And I was asked to be the co-chair of ACM-W, so I did have my feet in both fields. But at the time I think I was more successful in my women-in-computing efforts than I was in my technical efforts.

I really struggled initially technically. I was the only networking faculty member at Alabama at the time. I didn’t have a mentor to help me learn how to write research proposals. My advisor had never helped show me how to do that and I floundered for several years. Almost to the point where when … at one year I actually did apply to several teaching institutions, thinking that maybe this research stuff wasn’t for me. And I obviously … certainly did not have much confidence, which I would like to talk about at some point during this interview. And … seriously, almost considered … yeah, almost considered giving up on the technical aspects. And then NSF gave me this tiny little $17,000 research planning grant award. You know, dollar-wise, it was insignificant. Confidence level — it was huge! It was huge to get this tiny little award! And so the next year when I applied for a CAREER grant (this was my fifth year in applying, I’d been rejected the previous four — which they no longer allow, I might add), in my fifth year, I completely switched topics and threw out everything I had done before and did something completely new. And it worked. And I was awarded the.
CAREER award. And suddenly realized that I had been trying to do research that I had no passion for. And I moved on to a new field that I got very excited about, that would, I thought, you know, could potentially have an impact on the world. My previous research did not have much impact at all, and so the passion wasn’t there. My advisor, if I dare quote him, called that type of research “intellectual masturbation” — without a lot of impact. And my … the passion for me was just not there. So switching research topics was a huge step in the right direction, because I became passionate about my research and I became very successful at it. But it took me a long time to get to that point.

B: So you were still at the University of Alabama when you got this CAREER grant.

T: Yes. I received the CAREER award the year before I left.

B: And so that made you more saleable as you looked at your next opportunities?

T: Yes, I think it did. I think it did. And when I went looking for a job, there were very … at the time the faculty market was really, really good to be moving. This was in 1998. You know, we went from 500 applications down to 75. So it was a very good time to be looking for a faculty position. And so I only applied to three universities and then ending up saying “No” to one interview offer. So I was very, very selective. And what I was looking for was a university that had a Ph.D. in computer science and that was a small university. My soul is just a better fit with the small university than the larger. Because I went to small K-College, large Michigan State, small William and Mary, large Alabama, and now I am here at the Colorado School of Mines, a small university again. My husband and I miss the sports immensely.

B: I was going to say, the sports.

T: Our sports team … yes, our sports team is nothing to write home about, so we do miss the sports. But other than that I prefer being at a smaller university. So yes, so I was very selective in where I applied and fortunately I was offered this position. And it was a good fit for my husband, because we had Denver and the IT market. And so I actually received the offer and accepted it within 24 hours.

B: Wow!

T: It wasn’t something I gave a lot of thought to. Yeah.

But anyway, back to your original question. When I created this keynote for this talk in Australia, I mapped out my career and over, you know, twelve years of my career, I was able to … I had a chart showing the difference between my successes my first six years versus my successes my second six years. And it’s … I mean, it’s just mind-boggling. I did not … I had to learn how to be successful. And it took me six years to do it.

And that’s one thing that … I try and mentor our junior faculty, because I think I really struggled because I didn’t have mentors as a young faculty member. And that really hurt me.
And so, that’s one of my goals today, is I have a mentoring plan with several junior faculty members. So they don’t have to go through the same trial-and-error process that I went through.

B: Do you want to speak a little bit more about the confidence? You were talking about that …

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

B: Yes, I have.

T: Oh, my gosh! I was so thrilled when I first heard about it! I just learned about it a couple of years ago. And … it just struck home for me. Tremendously. I am definitely an imposter at this job. I’ve been an imposter my whole life. And when you look at the checklist of, you know, who are potential imposters, I can check many of them. I’m a first generation professional, you know, my parents were blue-collar. I’m in a field that is heavily dominated by men. So there’s many that I can check. So I’m a huge imposter. I remember when I was accepted to Kalamazoo College and actually went to Kalamazoo College, a little voice inside my head said that I was a test case. You know, “Let’s take this idiot girl from the backwoods, you know, and put her in this environment that was very intellectually stimulating with a lot of smart people and let’s see what happens!” [laughs] So I really felt … and I knew intellectually, obviously, that this wasn’t the case. They don’t have these types of scientific studies to see what you can do in that type of situation. But a little voice told, you know, would sometimes raise up and say, “You know, well, you don’t really belong here. And you’re just a test case!” Which is very silly, but that’s how I felt when I was there.

And I’ve carried that with me my whole life. I definitely feel like an imposter. So learning about the Imposter Syndrome was huge … was HUGE. And so now I tell everybody that I possibly can about the Imposter Syndrome. Whenever I give a talk that’s related to women in computing or successes or whatever, I try and fit in the Imposter Syndrome and usually ask for a hand show and then always, you know, 75% of the room raises their hand. So I think it’s really good to know about the Imposter Syndrome because then you can start dealing with it and, you know, learning to be more confident.

[35:22]

So, yes, confidence has always been something I’ve had to struggle with. I’m not nearly as successful as my record indicates. [both laugh]

B: So you haven’t been quite successful in getting rid of this Imposter Syndrome.

T: Yes, I know, it’s still there. It’s still there.

B: You talked a bit about your mentoring philosophy and the importance of mentoring. And somewhat research — that you need a passion for research. How about your teaching philosophy?
T: Yes. So it turns out that I love to teach. I didn’t … when I was in the Ph.D. program, I thought the last thing that I would want to do is be a teacher. I didn’t have that driving urge that some people have to be a teacher. But I actually really do love the job. I really do love the job. So my teaching philosophy is: I spend a lot of time on my classes to try and make them interesting, to try and show them the big picture and the little details. My classes are very collaborative type classes; I don’t stand up at the board and lecture for 50 minutes or however long your class is. We do a lot of group work and the students have to respond to numerous questions throughout the lecture, after, you know, they work in groups and talk to their partners and what not.

So … yeah, I don’t think that I’m the best teacher. I haven’t put all my focus on teaching, because I also have the research that I really love to do. But in general, I’m better than the average teacher, so …

B: What have been your favorite courses to teach? And you indicated … like that might change.

T: Yeah, so I have been … when I was at Alabama, and even for my first — how many years have I been here at Mines? My first six years at Mines — the only classes I taught were senior-level classes or graduate-level classes. So I didn’t teach any lower-level classes. Partly that was due to we just didn’t have the resources here at CSM, at my university, to have faculty teaching lower-level, just didn’t have enough faculty to do that. We’ve known for years that we wanted to have a faculty member take a look at our first introductory computing … you know, programming course. We’ve wanted to do that for years. And so during my sabbatical, I realized that I wanted to do something different and it seemed like a good fit to go down there and try and make a change, especially with the drop in student enrollments … anything we can do to try and improve our enrollment.

B: So you mentioned “down there” …

T: “Down there” in the lower level.

B: The lower level.

T: Lower level, yeah. So it’s a fun class to teach. It’s a very different class to teach. You know, you learn what concepts really trip students up, concepts that I have always in the past assumed my students knew in the upper level … you quickly learn about what is difficult for these students. So that’s been very fun.

B: Do you have any favorite stories about that?

T: Favorite stories? Well, I guess I’ve only been teaching this class two semesters now, so I’m still a newbie at it. I certainly like … I can think of several students that have come to me and said that that course has made them interested in considering computer science as a career option, or as a major or a minor. So I can think of six students off the top of my head that
have come to me outside of class to talk about majoring or minoring in computing. And I
treasure those memories because part of the reason why I love my job so much is you can
have such an impact on someone’s life, encouraging them to do this or that or the research or
the papers, or whatever — the grant proposals, whatever. I treasure those memories that
remind me that the reason why I’m in this job is because of the impact you can have on
people’s lives. And … I mean, I think back to some of the faculty members who had such a
huge impact on my life and now knowing that there are some people out there that when they
think back, they think of me. And that’s pretty cool. That’s pretty cool.

[40:25]

B: Well, another part of your life — you mentioned that you were active in ACM-W, that
Systers moved you to that. What other professional organizations are you a prime
mover in, or helped your career, or helped you think about …?

T: So my main research organization is SIGMOBILE, ACM’s Special Interest Group on Mobile
Computing and Systems. And I’m the treasurer of that group currently. So I’m pretty active
in SIGMOBILE, taking care of the budget and the in-cooperation requests. It’s amazing how
many “in cooperation” requests we get for SIGMOBILE. It’s just amazing. So I’m pretty
heavily involved in that community as well. So, again, I have my foot in two communities. I
do service work for my technical research and I do service work for the women-in-computing
efforts.

B: And is it a symbiotic relationship, in that this professional work aids your career as well
as …?

T: That was actually a question they asked me to address in this keynote address in Australia,
was how … how the two either help or hurt each other. And I think that they … having my
foot in two communities has hurt me in the fact that I work a lot. And fortunately, I have a lot
of energy and I love my job, but I work a lot more than many of the men that surround me. A
lot more. So that, I think, [is] unfortunate, especially now that I have young children. But I
haven’t figured out how to back off on either of the communities. I can’t give up one … I
can’t give up either, in my opinion, so I don’t know how to back off on that.

B: You’re leading right into the next question that I have. It’s what were the major
challenges that you’ve had in balancing your personal, professional lives?

T: I do have some tips on that, Barbara, which we can get to.

B: All right!

T: But going back to the pros, I think the two communities have helped me. Because when I
write a technical research proposal I always have a piece in that proposal that has to do with
women in computing. Always. I always fit it in. And with NSF’s broader impact criteria and
their evaluation, I always score very high on that, because I’m not … I’m not just using the
words. I read so many proposals of “and we will recruit women and minorities.” And I’m
thinking, “Why? You haven’t done it in the past, what makes you think you’re going to do it
now? How are you going to do it?” But I actually have a lot of efforts in that area, so I’m
taken seriously. So I think that my research proposals … I have helped get some of my research proposals funded because of the women-in-computing piece associated with it. But I also think the other way. I think some of the women-in-computing efforts that I do, I think my research has helped me … I think I’m taken seriously, because I have this very strong research program that … so I think the two have helped each other. And my research proposals bring in some money to help with my women-in-computing efforts, you know. So I think the two have helped each other.

But the biggest challenge is, as you mentioned, is the time, because you have service in both areas, you have to keep up with the literature in both areas, networking in both areas, travel to the conferences associated with both areas. I mean, it’s almost as if you have two jobs.

B: I’m also hearing a third one, because if you’re going to focus on introductory computing, that’s another issue.

T: That’s a whole ’nother issue, I know.

B: Another area.

T: And I actually was involved in SIGCSE way back in the mid-1990s and I gave that up, realizing I couldn’t do three communities, so you’re right. You’re totally right.

B: So do you want to talk about juggling the family with the career?

T: Right, so here’s my new … this is … again, I feel like I’m giving my keynote address, because they also had asked me to talk about how you overcome these challenges. And for me, there are several things that I think have really helped me. One is my husband got me a book called *How to Say No Without Feeling Guilty*. And I wish they had a Cliff Notes version of the book, because there’s a lot of … you have to wade though a lot of crap to get the diamonds, in my opinion. But one of the two things that I took away from the book is that when I get asked to do something professionally, the person who is asking me just wants to have a job done. They don’t care who does the job, they just want the job done and they want it done well. So if you can give them somebody else who can do the job and do the job well, then there’s not going to be any hard feelings — because all they want is their job done! They don’t care if you do it, just as long as someone does it. So I’m able to say “No” to a lot of professional requests much easier now. Because I say “No” with a suggestion of who can do the job and do it well. And sometimes I’ll give two or three suggestions, just in case they get a “No” from someone on their next request. So I have found that helps me to say “No” professionally a bit more.

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

The second thing that helped me was I heard about this woman who wrote a book on the four Ds. I don’t know if you’ve heard of this: Delay, Delegate, Diminish, or Delete. And she said that in everything that you have on your to do list, if you need to find some time, you ought to try and figure out one of these D’s to use. Delete: maybe it’s not all that important; maybe you can delete it and it’ll be okay. Delay it: you know, maybe it doesn’t need to be done this week; let’s push it back for a couple of weeks. Diminish it: maybe you don’t have to do the A+ job on it, maybe you can get away with the B- and that’s good enough. Or Delegate. And I’m a queen of delegation. I delegate a lot of stuff to my students, which helps me be even more productive. So, yeah, so I live by those four Ds.

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

T: Yeah, so one thing that I learned a long time ago from some presentation by someone really smart — I get a lot of the tips how I live our life through our top women in our field. I don’t know if you’ve seen many people like Jan Cuny and Mary Lou Soffa and Janie Irwin and Anne Condon … You listen, I’ve heard many of them talk several times and live my life by their very, very smart advice. And so one piece of advice I took away from one of these lectures was to be real organized (I’m real organized with my “to do” list) and then schedule your time … what you’re going to work on when for your week. So I have my very, very large “to do” list. And then at the beginning of the week, I figure out what are highest priorities for that week. And then those are the ones that I focus on for that week.

As far as scheduling my life: my husband and I just recently started, as of January, a new schedule where I don’t … Thursday is my day to be the stay-at-home mom and he works, and then I work on Saturdays. So we do a six-day-a-week schedule. And I really like that schedule, because Thursdays, then, I can be involved in all the kids’ activities. So every Thursday morning I volunteer at one or the other of my children’s schools for a couple of hours. And then I get to cart them to tennis practice or, you know, whatever those things. So I really enjoy my Thursdays. That’s a new thing we started this year and it works well for our family. And I also find that I can get more done on a Saturday than I can on a Thursday, because there’s less people around the office. So often on Saturday I can go home by two o’clock in the afternoon. I don’t have to put in that full day.

Another thing that I think that has worked well for me throughout my life is I don’t sleep that much. So I can get a lot of work done before my kids even get out of bed. So I do that as well.

B: Do you have outside interests, outside of computing and women in computing and your children?
T: And my children? I have lots of interests. Do I have time to partake in any of them at the present time? No! My kids are … Emma is almost four, she’s 3 and ¾, and my son just turned 7. And at the present time, Mommy is really cool and they like spending time with Mommy and so I’m there. Some day, they’re not going to want me so much and then I can get involved in the things that I really, you know, personally, enjoy doing on my own. But right now, as long as my kids want me around, I’m going to be there.

B: You’re really leading into what my next question is. Because you are mid-career. I would consider you to be a young to mid-career person. Where do you envision yourself after having — you’ve had 12 to 13 years in the field — where do you see yourself 12 to 13 years from now?

T: That’s a good question and I’ve done a lot of thinking about that the last year and a half. That’s a really good question, Barbara, and unfortunately I don’t have answers. I think that … one that thing I definitely … I’m a full professor now as of just a few weeks ago …

B: Congratulations!

T: Thank you. Thank you. And my husband said to me that, “You know, maybe it’s time to get off the treadmill and enjoy the view.” Because I feel like I have just been racing up the tenure-track ladder and then up to full professor. And getting lots of money. And having lots of students. And writing lots of papers. And I feel like I’ve been in this race to succeed. And so for the last year I’ve scaled back a little bit, trying to figure out, “Yeah, where do I want to be?”

I actually think … first of all, I’m switching research directions. Once again. I am going to head into using sensor networks for the health community. So that’s a pretty big switch, so I’ll be doing a lot of reading this summer. Again, what’s driving me is I no longer have a passion for my research that I’ve been doing. I don’t see the impact that it will have on the world anymore. And for me I have to have … I have to see potential impact. And so anything we can do in the health world, especially as our population is aging, and the whole baby boomers are becoming senior citizens, I think that that could have a huge impact. So I am switching my research career. I’ve already formed a couple of collaborations with people. And I’m starting to think about what my first proposal will be.

And I am also going to do less … I think that I will do less just trying to get the money and more what do I want to work on. And so I think I am going to be doing more women in computing and more education. I actually have two projects for middle school kids that I’m getting involved in that I am kind of excited about, just doing something different. I’m doing a really weird networking project at the Richard Tapia conference, at least I’m hoping to get the funding to do this project. That will be kind of fun to help with the whole networking and forming a strong community at Tapia. And if that goes well this fall, we’ll do it at Grace Hopper the next year.

Yesh, so my big thing now is I’m really thinking about the impact and the passion. And if I can’t see both, I’m not getting involved. And I have a couple of grants right now that were
more, I think, about … some interest, but mainly about just bringing in the money. And I’m no longer going to do that.

[B: And that kind of moves into the wrap-up part. And you’ve done it throughout the interview, but I’ll still ask it. If you’re going to give advice to a young woman just starting out, what would be the major thing that you would say or …?]

T: Well, I think as far as getting into computing, it is a fabulous career to get into. There are so many opportunities — there’s lots of opportunities for women in computing and there’s a lot of companies out there that are very aware of how important it is to have a diverse workforce. Computing professionals earn — I think it’s 97 cents on the dollar — computing women professionals — earn 97 cents on the dollar compared to the males, which is one of the best fields. In general, I think women earn … is it 70 something cents on the dollar, whereas in computing it’s like 97 [cents]. So we’re almost equivalent. So … I think the reason why women do so well in this field is because computing is such a young field, you know, that … a lot of new wave thinking, in a sense. So there’s not a lot of discrimination there, which I think is good, in industry anyways. So there’s tons of opportunities; there are so many different types of jobs you can get involved in. And there is the opportunity to work part-time if you want to put more of a focus on your family. There’s an opportunity to work part-time at a lot of companies. And I think that the coolest thing about computer science is if you like to learn, you continually learn in computing. For me that’s a huge draw, because I love to learn.

B: And how about going into computing education and into academia? What would you say to women about academia as a career path in computing?

T: I kind of stumbled into it. I love my job. I think I have the best job in the world. You know, I get to work on what I want, when I want. I set my hours almost completely for myself. I can work a lot one week, very little the next week. My daughter had surgery last week; I took practically the whole week off without giving it a second thought. It’s very flexible, the type of job that we have. Yeah, I love my job. I get to travel. I get to meet interesting people. I really love my job.

B: Good! All right. Thank you. Is there one last closing story that you’d like to tell, so that this would … people would remember it?

T: I think most women in male-dominated fields are there because of encouragement from somebody, perhaps multiple people. In my case a lot of that encouragement came from male professors. I think there are situations, though, there are times, where, you know, you might be … you might hear something, or be told something, that might make you consider not to press forward. But I think that if — because there was a time when I didn’t think this job was for me at all — but I think that if you just keep moving forward you can find that job that you really, really love. And if you currently have a job that you don’t really, really love, well then go look for a new job. There are so many jobs out there that you can find something that really sparks your passion, that you enjoy tremendously, and don’t quit until you find it. Give
computing a try, because, yeah, I think for a lot of people, especially people with the logic, mathematical interest, this is a great field to be in.

B: All right! Well, thank you for your time, Tracy. As you can tell, anybody listening will know how much you have on your plate and we really appreciate your giving the project this time. Thanks.

T: Sure. No problem.

[59:34]