Barbara Boucher Owens: This is an interview with Mats Daniels, being conducted on the 29th of June, 2011, in Darmstadt, Germany, by Barbara Boucher Owens. This interview is part of the Computing Educators Oral History Project.

Did I get your name correct?

M: Yes, you did.

B: Good. Well, we start these interviews way back when. Okay, so we start out with: Tell me about your parents — like their education, their work, their … did they have computer-related careers. Tell me about them.

M: Oh. Well, my parents are both teachers. My mother in history and Swedish; my father in math and physics. My mother was in the … upper elementary, like year seven, eight, nine. And my father was at the next stage, the high school, eleventh. And he also eventually became headmaster of the school in Mora. And … well, what can I say, I mean….

B: What was your father’s field?
M: My father’s field was math and physics. And it’s … he went to Uppsala University to study that and astronomy. And my mother … I mean, I think they met at the teacher training college where they … I’m pretty sure my mother didn’t go to the university level to get educated in Swedish or history. I think it was history. What else could I say?

My father’s background was growing up in a small country town in Dalarna [a region of Sweden]. Probably the first in his family to actually go to the university, but this is 1950s and at that time, the number, the proportion, of the population that went to universities were quite low. So I guess it’s not that strange that he didn’t — that he was the first.

My mother’s father, he was also in physics. Well, he didn’t get a Ph.D., but he was at least on the verge of getting towards one in Lund.

B: Your mother’s father?

M: Yes. She grew up in Stockholm, which is like the big city in Sweden, the capital.

You said something about where I was born. They … I was born up in the north, in a small town at the Finnish border. And that’s because that’s where both of them could get a teaching position at the same time. So my first three years I was living up in a town … I have no memories of it. But it’s kind of cool to actually have been farther north than most other people. So yeah. But they are basically teachers. And especially my father is really into … really loving academics.

B: Is he still actively an academic?

M: Well, he’s retired now. But he’s really been enjoying doing math with my daughters as they are doing … they are becoming engineers. Or one is an engineer. He was actually … he did one of the math tests — I think Calculus 2 or something like that, the test my daughter had.

So he was doing it just for fun and, since I knew the teacher, I sent the exam to him. He actually graded it. [My father] turned out to be best in the class [Barbara laughs] and he really sort of loves math and this is … I mean, he’s 81 now and he still sort of … well, at the moment, he’s reading Transform Theory because that’s a class my youngest daughter is going to take a re-take exam in sometime. So he … this is a new area for him, so he’s been reading the book and wanted to contact the teacher to discuss some of the things. I was just … he loves math. Gauss is his god. That’s the type of person he is.

[5:12]

B: So, you said you were born in this tiny town on the Finnish border, but where … and you said you only lived there until you were three.

M: Yeah.

B: Where did you grow up?
M: I grew up in Mora in Dalarna. And that’s … well, not a big place either, but it’s in the heart of Sweden. It’s been described as the best-known small place in Sweden. Many people consider Dalarna to be really the heart of Sweden. So it’s a town of, like, 20,000. But it’s the central part of a large area; north and northwest towards the Norwegian border, there is just small villages. So this is the central town in a rather large area.

B: So tell me something about the type of school that you went to and what was the community’s attitude toward education, what was your impression of school.

M: Well, I mean, I went to school in the 1960s and early 1970s and … well, I think the general attitude towards school was … well, in my family it was kind of clear and important. This is something important and I always knew I wouldn’t stay where I grew up because if you are going to go to university you have to move to another place. And so in that sense, … well …

B: But what was it like? You’re a little boy going to school in Dalarna. What do you remember? Do you remember particular teachers? Do you remember particular subjects? Do you remember talking about it?

M: Well, yeah, I think I kind of, in a way, since both my parents were teachers, I think I was thinking about what the different teachers did in the different classes and maybe noting it more than I otherwise would have. The way things were done. I mean I had a German … teacher in German, who I … well, he wasn’t really doing teaching the way I think … he was a bit tough in some sense. But he also really loved the subject. And I remember that making it something I took more serious than I otherwise would, because …

Math and science have been rather, sort of easy for me. Swedish, or language, has been a bit harder, probably because I’m approaching it more in a sort of natural science way or not being confident in how to tell stories or how to make things eloquent, what do you say, elegant? I don’t know. It’s sort of … I didn’t really feel confident or didn’t really feel I got the encouragement in that area, which is kind of strange, because now I really think language is fun and interesting and something that’s really intriguing. How it works and how you can use it. But at school, it really sort of … And then English was a pain [Barbara laughs], so I dropped English and kept German, probably because of that teacher who got me going with German.

So yeah, I think … but also, I mean in high school, and also in upper elementary school, there were quite a few who really didn’t take studies seriously at all. It was just something you did or went to. So, I don’t know … it was a time. I enjoyed going there, but it wasn’t … yeah. It’s hard to say … trying to remember. I mean, it’s something I took for granted: “This is important. This is something I will do.” And most of the things I enjoyed doing.

B: Did you have friends that you studied with or that shared that value of education? Or were you …?
M: Well, I think if I look back at the friends, we were probably … the ones I was spending the most time with were students who were good in school. Although I don’t think any of them actually went to the university out of the ones I spent most time with.

B: Mmm hmm. Did you have …

M: One of them, he actually went to work for Apple in one of the early years and I think he did well. But he certainly didn’t go … he wasn’t the study type, in some sense. He was bright, but not …

So I don’t think I could say that I was in a group where we were taking studies seriously. It was … we did different things and I guess most of us were … didn’t have a problem with the subjects.

B: What did you do for fun?

M: Oh, I was … part of the time I was doing athletics and skiing. So I was competing in skiing.

B: In skiing?

M: Yes, cross-country skiing.

B: Cross-country.

M: Yes. And then upper teenage, we went out to dances and having parties, so … But it was … Yeah, I was spending a fair amount of time doing training for cross-country skiing … it’s a bit time consuming if you want to be at least semi-good at it.

B: Did you have any siblings?

M: Yeah, I have a brother who’s two years younger.

B: What path has he taken?

M: He’s a … we both went into engineering at Uppsala University and even though he’s two years younger, we didn’t really spend all that much … we had different sets of friends and he’s …

He’s in computing, though. He’s just recently changed from … he’s been a security expert at PTT [Televerket, the national phone company]. Now he’s going to move into a consulting company, still working in that area. But I think part of what he’s doing is research in that area. So, in a way we have ended up in similar places but not quite, because, well, since I stayed in academia and he went out and made money.
B: So, through high school, you said that science and math were easy for you and that you worked harder in German. But you had to decide where you were going to go for your higher education. How did you make that decision?

M: Well, it was … actually I did … I can’t say this was something I really, really wanted to do. I had been looking at engineering education and I also was contemplating going for this … what do you call it? Keeper of the woods?

B: Is there a Swedish term for it, because we can translate the Swedish.

M: Yeah, I do remember that as well. It’s … I wonder if it’s … it might be jägmästare in Swedish. But there’s a higher exam where you’re sort of … your job would be to know about how to maintain forests. That’s another side of it.

[15:04]
My father loves math, but he also has a love for the forest. We have some patches of forest in the village where he grew up, in the small village outside [Rättvik]. And so he’s, part of the time, he would be out there maintaining patches [of the forest] to make sure they are kept well and so … well, the forest has been also part of my growing up.

B: So you were deciding forestry or math and science or …?

M: Yeah, at least I remember putting both those things on the table, thinking seriously about them. And it seemed like engineering would be keeping more options open. So I think I … most of the time I’m making choices by trying not to narrow down my options and trying to do things that I feel comfortable with. So … and I guess Uppsala, that’s the closest university to where I grew up. There were other universities that I could go to: Royal Institute of Technology, Linköping has a … maybe it’s a younger place than Uppsala and their education seemed not that bad, but eventually I put Uppsala as my first choice. That’s right where I ended up.

B: So when you got to Uppsala, as you’re starting to study, what program did you …?

M: At that time, they only had engineering physics; that’s the only engineering degree they had. And at that time, it was a four-and-a-half year program. But towards the end you could specialize in materials science, electronics, computer science, or … there was a fourth one as well, more theoretical — physics, I guess. So …

B: Had you done computing prior to going?

M: Not really. I had done … in the last year, in high school, there is this special project. And I actually … my special project was to learn some BASIC. And I remember I needed to go to Borlänge — that’s a city like 100 kilometers south of Mora — to actually get to a place where I could run a program. I mean this is 1974 … was it 1975? 1974 I think.

B: Was it time-sharing system for BASIC? Or was it BASIC on cards?

M: That’s right. I think it was the BBC micro that I had — you could use BASIC to control the BBC micro. It was a very small computer.
M: No, it was … that was on cards, I’m pretty sure. I …

**B: Did you go down there and stay?**

M: No, no. I went down there. I mean, I was preparing and then reading about it. And I … yes, there was another place in Mora where they actually had a computer and I was doing some study visits there, but I didn’t do … I think the only place I could actually do some small programming, that was in Borlänge. And it wasn’t a big project. But at least I had … I was doing something that was connected to computing. I mean, this is …

**B: Tell me how an 18-year-old kid — you were probably about 17 or 18 then?**

M: I was … yeah, 17 or 18, yes.

**B: Okay. How did you connect with these people and what kind of a place was it?**

M: Ooh. I actually don’t remember.

**B: That’s okay.**

M: It’s OK, I probably didn’t connect that much at all. I mean …

**B: Well, you had to know somebody, right? A teacher …**

M: Yeah. It must have been a connection my father had with someone. I would assume it would … it’s a bit scary, I really don’t remember who it was.

[20:00]

**B: That’s okay. That’s okay. But you already … so you had some interest when you went there, when you went to Uppsala?**

M: Well, the interest was sort of like this seemed like something that’s going to be useful. It’s not something I burned to know about.

**B: So, now we’re in Uppsala and you’ve decided at the end of your time at Uppsala to specialize in computer science. Were there any particular teachers in your sciences — you can even start back in your secondary education — but teachers that were big influences on you? And then when you got to university as well?**

M: Well, first of all, there is one-year military service between high school and university.

**B: I forgot about that, yes. What did you do for your service? Was there …?**

M: I was — what do you call it? — indirect fire director. I mean, my … I was leading a small group of — I think we were four — we were supposed to be out there and looking where grenades … where they would hit. So we would signal back, “You have to change because the grenades aren’t hitting the target.”
B: Were you using math to do that?

M: Uhh ... math came in, of course, because you had to know about where are you in relation to the target and using your knuckles in order to make some sort of estimation about where are the things hitting and where do you want them to hit. And you have to make some calculations about how to direct.

So yeah, math came in and I'm pretty sure ... I mean, that position ... I got that because, I mean they do some rather thorough testing, two days where they test you for your capabilities. And it's also a rather physical position because you have to be in front of where all the others are. So I guess having the skiing background and math and also at that time my eyesight was pretty good. So yeah, math played a role in that.

And if you go back to ... I mean, the first programming class, my memories from that — they started out with BASIC and since I had done this project two years earlier, BASIC seemed like it was a piece of cake. I don't need to spend that much time on this. And I do remember when they actually switched to FORTRAN halfway through. And I sort of thought, “Well, one language is the same as another.” And suddenly I was realizing that’s not quite the same and there are differences and maybe I should start to pay a little bit more attention to what is going on. So it wasn’t ... it wasn’t an eye-opener class. There was a bit more struggle than needed because of my not really paying attention for things then. But apart from that the first two years were really just a lot of math and physics and theoretical physics.

Then in the third year, we had some math class and I think the computer organization or computer architecture classes. I did find that ... that was an interesting class and I think the teacher there was in some sense making a difference in a way. I mean, it may be a bit sad, but this is the third year in university studies and this is where I, in some sense, felt like, “Yeah, this could be interesting.” The other stuff was more like, “Yeah, let’s do it,” especially the math classes I had.

[24:45] I mean the scenario of this education was you had three courses in parallel and we had a four-quarter system. So you had like twelve courses each year, every one more or less looking the same: lectures in the first two weeks typically contained 40 hours of lectures every week.

And then, towards the end, you had assignments and labs and less lectures. And the time wasn’t really enough, at least I thought, to really learn math. So instead I learned how to pass a math test. And you could ... the thing was you got ... sitting at lectures, taking notes, doing whatever homework they assigned you. And then, towards the end, when you got to the exam period, I got a number of old exams and you went through them and found some patterns and what they were actually asking for and how to solve some of them. And that typically would be enough to pass the test. I mean, of course, I learned something but it wasn’t ...

B: I never go this way in an interview but I will for you because you’ve opened the door. How that experience form how you teach and how you view education now?
M: Well, I think it does some, because it’s sort of … it … I think it’s been influencing me in a way that I know that even if you are interested, if there is an easy way out, time can really make you go for that. And also, if you have an education where things are getting predictable, lots of students are going to learn how to deal with the predictability of the examination rather than on the content of what you’re learning.

B: So are you trying to break that cycle or do you try to …?

M: Well, I try to make sure that there is a variation and also that … a variation in the way things are examined. But also in trying to … get beyond not getting engaged. Trying to make sure that there are things engaging throughout the course.

And also I did … my fourth year, I went to Case Western Reserve University [as an exchange student]. And there … I mean suddenly I was in a place where teaching was done differently and … for instance, we … I mean you know the American system. In Sweden, we are … every week has an individual schedule. Like I said, 40 hours of lectures in the first two or three weeks in a period. That’s pretty … that’s a lot of information. I mean, the idea there is that you should get to a point where you can do stuff. And then coming to Cleveland, having in some classes one hour or one meeting a week, I mean it was strange because it felt like nothing is happening. I guess in a way we were supposed to read more at home, but that sort of wasn’t the way studies had been before for me. So I guess … and then we had these first exams … and then … that was also … I mean, the exam was spread out. Typically, in the way it was in my education, it was a final exam and that’s where everything was decided. And suddenly I was in a system where they could have … they had a midterm, you might have even quizzes that actually counted toward the grade. And also, most of the courses I did take was a semester-long course. And to me that was — apart from the first start where I didn’t really get started because things were … I mean, it sounds like I didn’t get enough information to do anything.

[30:04]

But after a while, this felt … it was something that suited me better than the way I’d been studying in Sweden. Because … yeah, the way it felt like when it came to finals week. I mean, the idea that, I think one of them, we had three courses and they were all examined within twenty-four hours. That would never happen back in Sweden. There had to be at least two whole days between two exams. And [in Sweden] the exams were like six or seven hours long and in Cleveland they were three hours. And they were … Actually the content of the exams were a bit different too. But the main difference was, I think, I was prepared in a different way for the exam. I didn’t need or didn’t … there wasn’t time to actually do the cramming for the exam. At least, I didn’t feel like it. Not the way it was in Sweden. Although I did see Americans who were behaving more or less the same as I had back home.

But also when we came back — we were six of us, six Swedes going — it was kind of interesting. Because the way … there was definitely a shift in grades. I got better grades in the American system than in the Swedish system and some of the others, the opposite happened. I guess that’s another issue that sort of colored me. I’m … don’t get me wrong, I think grades are important, but they are not an objective measure, I mean, that’s the way I see it. You … sometimes people pay a lot too much attention to what grade did you get without
thinking about what did they actually measure to give you that grade. What did they look at?
So in a way, partly what I’ve been colored by is seeing a grading system that doesn’t really
measure learning.
And also, coming back, one of the agreements from going to Case was to also do the
Master’s thesis at the department. And also …

**B: Which department: Uppsala or Case?**

M: In Uppsala. And also giving feedback to the program coordinator about the differences
between the systems, because he was interested to learn from it, because … and actually, he
made some changes. He did reduce the number of lectures, trying to … and also pushing in
that there would be more of a continuous examination, more like the American system. I
mean it wasn’t a total shift. But there was changes and there were discussions about
educational differences and the pros and cons about doing things. So there was a discussion
about pedagogy that came from this.

**B: What did you do your Master’s thesis work on?**

M: Oh, I did that … I was writing an operating system for one of the new Intel [8086] systems.

**B: So, it didn’t have anything to do with pedagogy?**

M: No, no this was in the Computer Science department. Although actually at that time the
Systems group was part of the Department of Technology at that time. So it has roots in
control systems. There was a guy in the control systems that liked computers and then we
formed a subdivision in computer systems.

**B: And who was that?**

M: That’s Björn Persson. Later became a professor at Royal Institute of Technology. I would
assume he’s retired now. And then, after I did my Master’s thesis, I got enrolled as a Ph.D.
student. I mean that more or less just happened. And it … I had always been interested in
education, so it fitted.

[35:22]

**B: So can you talk to me about what was going on in your life at that time? You got your
Master’s. When you were going to school in Sweden were you being paid? How were you … as a teaching assistant or … ?**

M: When I did my Master’s thesis I also had a TA position. So it was half-decent salary and I
was helping out with teaching computer architecture. Not just being a TA actually, I was
doing part of the lecture. We were a group of three or four, actually, who was doing teaching.
And then … I mean, this was 1980 and none of the staff actually had a Ph.D. in computing.
They had Ph.D.s, but in other engineering or control systems or something like that. And
some didn’t have Ph.D.s either. So actually coming up as a Ph.D. student, the status was
more or less to be a lecturer. During my first year as a Ph.D. student, I was part of a team
teaching computer architecture and I was the main teacher for the operating systems class. So at that time … not all but most of the Ph.D. students were also really teaching courses.

**B:** So then you finished your Master’s. You were starting on your doctoral studies. What happened then?

**M:** Yeah, well … well, I guess I tried to find an area where I was going to do … I mean, there was no professor in the area and so my actual supervisor was a professor at the Royal Technical Institute of Technology — although that was more on paper than in reality. So Björn Persson was my acting supervisor. And I guess I eventually moved into formal methods, describing communication protocols, describing computer architecture, describing timing aspects of it. And I guess it was fun and interesting to do, but I also wanted to do it a little bit differently than what he wanted.

I do remember we had a meeting with the professor from KTH [Kungliga Tekniska Högskolan, the Royal Technical Institute of Technology], just me and a friend of mine. We worked rather closely together on this formal methods. We had designed a language based on finite-state machines, or extended finite-state machines, to do this. And Björn wanted us to take this more into production — or no, or a tool. So my friend was going to write a compiler for that, for our language, into something that could be runnable. And I can’t remember what he wanted me to do.

But I was more interested in actually looking at that from how you can actually describe things. So when this professor came, he had this discussion and then I actually made the mistake of actually talking about what I wanted to do. And he said, “That sounds good!” And then we sort of … he just said, “Well, that sounds good. Do that.” And then he spent a lot of time talking about my friend, about what he was going to do. And he was questioning him:

Was this really going to be good enough? Is this really Ph.D. work?

[39:59]

And as I remember, it was a bit of a discussion there and I felt pretty good. I was like, you know, this guy is behind what I want to do. Which was, in a way, a mistake, because he was not really part of the research team. And, as it turned out, my friend, he had the support and Björn … he really did what he was going to do. So he went straight ahead and did this degree, Licentiate degree, between a Master’s and a Ph.D. And then he went over to do a Ph.D. as well. I more or less got stuck because … well, the communication between me and Björn didn’t go all that well after that meeting, I think. And I took … I think it was in 1985 where, if I’d done things in the proper time, I would have, should have, been sort of close to getting a Ph.D., whereas I was actually getting my Licentiate degree instead.

**B:** Your what degree?

**M:** Licentiate degree. It’s this midway degree. Well, I guess it’s the same now. A Ph.D. is supposed to be a four-year program after Master’s and this Licentiate is supposed to be a two-year — full-time, since you’re doing TA or working as a teacher. You don’t work full-time as a researcher. And doing this as a Ph.D. student, one has a salary that’s pretty okay
actually. It’s not a super salary, but that’s … at least for someone going out into industry the first couple years, it’s almost comparable. So it’s …

**B:** So, you were, as you said, stuck. What did you do career-wise?

**M:** Well, I did get my … that degree.

**B:** That middle degree?

**M:** But around that time there was this change where the subgroup in computer systems formed a department of its own and at the same time quite a lot of the senior staff went over to this Ph.D. institute of computer science, which was more of a research organization. So in 1985 … or I think it was … yeah, I think it was in July. It might have been halfway through 1985, that’s where this official change was done and I actually got a teaching position instead. And I stayed at the department, whereas Björn and a few of the more experienced researchers went to the Swedish Institute of Computer Science. Some, but not all, had like a 20% position also back at Uppsala. I mean, in order to get something running, because it was a large drain, brain drain, from the department. So since … I guess from 1986, I was a full-time teacher.

**B:** So, in this full-time teacher role did you supervise Master’s students and graduate students as well?

**M:** Well, it depends on what you mean by graduate students.

**B:** Well, Master’s. It would be Master’s students, I suppose.

**M:** Yeah. So, yes and they also had … in 1981, we started a computer science education program, a four-year program. So around the same time as I … so in 1985, it was the first time we had all the years in place for this new program. So we had substantial more teaching to do because of this than we had. It was a fairly successful program. Good students coming in. And so educational-wise we were sitting in a good position with interesting courses, good students, and also teaching engineering students from in the program I took, the latter part of the engineering physics, had computing courses.

[45:28] Actually, it’s a side thing: when I taught the operating systems class, I had my brother in the class.

**B:** [laughs] Really?

**M:** So he actually has had my mother, my father, and me as teachers.

**B:** [laughs] Have your children had you?

**M:** No. No, I would feel uncomfortable with that.
B: The other way! [laughs]

M: I guess so.

B: Let’s try to … one of the reasons you are such an important part of this project is your ability to work internationally and your great mentorship of many people. Do you want to talk a bit about that transformation, how you got so involved internationally and how you became a mentor all over the world to people?

M: Yeah. Well, partly I think doing my year at Case Western was opening my eyes to the importance of … well, to me it was an inspiration to do … to go somewhere and try to adapt to another system. It was … I felt inspired and I felt like … a bit like … yeah, I put in more effort into the studies, partly because I thought … I think it mattered that I wanted these guys to think well of us back in Sweden. There was sort of a pride thing there, I think. It sort of motivated me and I think it was the same for most of the other Swedes who went. And also you put in some … you had to make an effort to make this happen. And once you’ve done that, you want to use this effort. It was kind of like you can’t just waste spending … making this sort of decision to go somewhere else and do something. It’s becoming a commitment, I think. But that’s aside.

The other thing is that, well, becoming a teacher, full-time teacher, was like … I still had … I mean, research was also something that I felt like I wanted time to do this, but … well and then I got this invitation from People to People to come on a China trip, a trip to China — which was sort of like I don’t know why I got it or why I paid attention to it, but it sounded like an interesting thing to do, to break what I was doing in a way.

B: You and I both know what People to People is, but probably the people reading the interview might not know.

M: Ah!

B: You want to give a little description of what was involved?

M: My impression of it was that here is this organization that’s trying to bridge boundaries between countries and making … placing … taking, in this case, teachers, to go to a country and then to … this time China … to visit … to sort of … I don’t know. I mean, it’s also … I think there is some sort of wanting to “spread the light” in some sense. But it’s also about actually getting the people going, knowing about the place they go to.

So it sounded like an interesting thing. And since it was about education, which I really — I mean, being a full-time teacher, I was, of course, interested in how to make education better because I was … I was part of the programme committees, where you discussed the structure of your programme, educational programme, what kind of courses you had. And I had opinions based on my experience, seeing that there were some limitations or some things that I didn’t like in the programmes. So yes, I had some sort of desire to know more about how to make this better.
But it was kind of expensive, so it wasn’t something I could really pay for myself. And I just … I asked my head of department if he could sponsor me and he said, “Well, I can give some,” he said, “but not all of this.” So I wrote a letter to the Vice-Chancellor. And he actually got back and said, “Tell me more about this” and actually gave me money to go, so …

There was like seventy people, most Americans. But I think for me what I got of that was maybe not as much the contacts in China, but within the group is where I … Many of them were very active in the SIGCSE community. At least Liz Adams, Bob Aiken, Joe Turner. I mean there were people who were in many ways great door openers into this community. I also met Joy Teague from Australia and through her I got a connection to places in Australia. So a couple of years later I went down, doing a year in Melbourne. But I think that trip gave me a lot of contacts and it also introduced me to going to SIGCSE. To go to a place where they actually talked about educational issues. So I started to think, “Well actually, one can do research in this as well.” And it … I don’t know, I mean, it’s also where I found the value of knowing people, knowing people in different places, knowing about them.

And another consequence was also that eventually I became the Director of Undergraduate Studies, so I had more control over who was teaching what. And you know you came for three months to teach. We have had John Impagliazzo; we have had Carl Erickson, Dawn Cizmar, Vicki Almstrum. There is some guys from Australia with us.

B: Nell [Dale]?
M: Nell has been there. We’ve had … Cary Laxer came for a time.

Well, actually being out there, being in the international arena talking with people, being visible, has made things happening both locally and for me personally. And I guess also, I think, me and what we are doing is also influencing outside.

And part of this was when Carl Erickson came over, he wanted to do some development work. And we used the opportunity of having him there for a year to apply for a grant, a development grant, to run a collaboration course between his home university, Grand Valley State University, and Uppsala. And we got that and that project was a national project for three years, fairly well financed. So through that I can bring people like Marian Petre, Sally Fincher, Mary Last. And also Mary Last, she got her Ph.D. based on looking at that collaboration. Anders Berglund did the same. Martha Hause in the Open University also got a Ph.D. based on that. So …

It was … well, things just started rolling. Doing things internationally had some momentum. It doesn’t roll by itself, no. But the Runestone project — that’s what we call that one — is still running, even though Grand Valley State isn’t part of it any more. We’ve had Rose-Hulman Institute of Technology for a short while. Now it’s running with Åbo [University] in Finland and Tongji [University] in China, so the basic idea is still in place. And we also started another.
I mean things … it’s going places, meeting people, there is … makes things happen. One thing was in … SIGCSE was in Dublin … oh, ITiCSE was in Dublin, I met Tony Clear. And he had some ideas that he wanted someone to collaborate with. And three weeks later we had a collaboration where my students were working with his students. That collaboration lasted for eight, nine years. And then there were some changes that unfortunately — at least I think it’s unfortunate — we dropped that collaboration.

But we also started another collaboration with Rose-Hulman Institute of Technology, where we’ve had this IT in Society class, where we’ve been — since 2004, I think — we’ve been collaborating with them. I think many of these things happen because you know people, because you can trust people and even though … and also it just happens because … I guess I’ve seen the importance of having local support for running things. And in Uppsala I can provide that myself since I have the position. But I think there is some sort of experience one can build on to make this, and there are … and actually seeing both the hard parts and the good parts and trying to focus on the good parts.

B: That’s a wonderful, wonderful answer. And it kind of combines all of the questions I have about professional service, professional organizations, the impact. And you’ve mentioned using … getting involved in SIGCSE. You’ve sponsored one of our — twice — you’ve sponsored one of our conferences and been involved in many of the ITiCSE conferences.

Did you want to talk anything else about your professional service, those kinds of … the organizations, the things you’ve done?

M: Well, one really. It’s like my friend, who we were working together with early on. He later on moved to Västerås, a smaller regional high school … well, higher … it’s not really a university, but it’s close. It’s like a community college, but it’s bigger. I remember once that he said to his teachers that, “Well, you can actually look at the teaching aspect of the education and just look at Mats and his colleagues. They actually do get to travel. They get to see people. They are writing papers. They are …” I think it was interesting to hear that I was mentioned as a role model, as an inspiration, for others to try to get involved in this community, in trying to not just look at subject research. That there are more things to being a teacher and some of them is something you can actually do research about. So that’s it.

It has been changing. It is more recognized. I mean, when Anders defended his Ph.D. in 2005, there was a pretty important, or a portal figure in Computer Science, who stood up and said, “Well, this is just plain wrong. This is not a thesis that belongs in the Natural Science and Technology faculty. This is something that should be somewhere else, in pedagogy or …” And when I defended my thesis, actually 30 years to the day after I enrolled — it’s kind of cute — there was none that sort of … had any question about that this is a valid research area within our department.

And we also had an international — well, when you get a new Vice-Chancellor, they typically try to do things. And the one sitting now is running towards the end of his period.
So when he started, he had this quality evaluation of everything research-wise in the university and now it’s getting … he was running this again. And our research group was definitely put forward in the department as something to show.

So I think things are happening and I feel like I’m part of making that happen, because — not saying this is something to do in a corner, but this is something that is important. This is something you can show to people. This is something that makes things happen, that makes education better. And education is a big part of what we’re doing. I mean research, yes, that’s important, but there are the teaching, the education, the understanding what’s going on. I mean, we do have a lot of people, students come in, spending a lot of time, money on being there. We should be professional about what we do.

B: I think people call it the “elephant in the room,” that we haven’t really talked about. You did mention that 30 years to the day after enrolling, you got your Ph.D. And that’s a little longer than most take. [Laughter]. Can you describe what gave you the energy to go back to getting a degree and how you chose the topic that you chose?

M: Well, it’s a …

B: And how did you get the support for it? I guess those are the three questions.

M: Um. Right. And … well actually, you should read Chapter 2 in my thesis, it’s about telling the …

B: We’ll definitely put a link to that in the interview transcript.

M: But what happened is … I think Vicki Almstrum is an important person in this. Because when she came, she had a Ph.D. in something that seemed to be … it wasn’t really computing, but it was very much based on computing or understanding computing educational aspects. And it was in a teaching setting I think, I’m not quite sure. But anyway, having her for a year at our department — I think it was 1995, something like that, or 1996, I’m not quite sure — but it became obvious that this is something one can do and I really had started to think about it.

I wanted to do research and in 1989–1990, I went down to Melbourne to try to restart in formal methods — I was working with a professor there — and actually got some papers done. But I really … my heart wasn’t there any more. And I really was more interested in education. So eventually going to the SIGCSE conferences, realizing I can write papers in this. And then … because of the way it was earlier in the 1980s, when we really didn’t have Ph.D.s, because people in teaching positions like me without Ph.D.s — Anders Berglund was one of them. And there was a push from the university to actually get rid of these people. Not get rid of them, but to give them a chance to get a Ph.D. because it looks better to have teachers that have a Ph.D. than those that don’t. Partly I guess. That’s one of the cynical reasons.

[65:39]
But anyway, there was money in there and Anders, he was going to start doing some research. And I think he felt like—he’s actually in my position here—he’s trying to … he was talking to one of the supervisors about doing something in using Ada and he started. And I said, “But Anders, look, where’s your heart? Why don’t you try to do something in computing education instead?” Eventually he — and his supervisor was the head of department at that time, he was pretty … — he said, “Yes, there seems to be some possibilities here.” And there was this national school that was a project that Anders actually also got involved with.

So anyway we had started to do more scholarly work, more research in education, started to publish. So I was in a way starting to do research. Although I guess for a while I felt like, “Yeah, I want to get my Ph.D. before Anders gets his!” [Barbara laughs] But he was more dedicated and I had more administrative duties, I guess. So then he got his and I had actually got the senior lecturer position ten years ago, something like that, based on having the equivalent of a Ph.D. So getting a Ph.D. wouldn’t get me higher up on the ladder of positions, so I didn’t have that incentive. But it was … I got some money, some projects running. I had a good time. I was doing things I wanted to. I got to travel. I got to do the research. So it didn’t really feel like I needed that.

And then we … well, eventually I got into the position of actually supervising one of the Ph.D. students we had with Lecia Barker. And so he graduated a year before me. And actually seeing him, following him through this process, I think that sort of made it … “Oh, this is so ridiculous. I mean I really should do this!” [Barbara laughs] And then I talked to Arnold Pears and Michael Thuné, who were — Michael Thuné is the research professor in computer science education research, because we have this area, research area at Uppsala. And he’s a professor in scientific computing, but he’s quite interested in education.

**B: So Arnold was your supervisor?**

**M:** And Arnold … yes. He was Anders’ supervisor as well. So I talked to him and I said, “Well, how do you view this?” Because I didn’t want to, as you say, go back and do this. I wanted to say, “Look here’s my publication record. Here are the things I’ve been doing. It should be enough. But can we agree on … I’ll choose a number of these publications, I’ll write something about that. And that should be enough.” Because I really wanted to make sure I wasn’t in a position where they would come and say, “You need to do this, this, and that. You need to do some more studies or some …”

Well, eventually they decided on five papers that were going to be representing a story that would be something I could write something about. And that’s … and it was actually fun writing. I had a good time, it was … and I didn’t really get any time off to do it, rather I was kind of doing it … well, yeah, I did get ten percent [time off], a research grant from the department last year, in 2010. But I guess I did the work … most of the work was done in January/February of this year [2011], finishing up the thesis. Maybe it’s happened I think because … well, people were kind to me and avoided … if it wasn’t really necessary, they didn’t come to me to ask me for things. So actually writing the thesis was giving me, in some sense, a more relaxed time than normal.
B: That’s very interesting.

M: Yes! But it was fun. And it was …

B: Good! I mean I have never seen anybody’s dissertation process get as much excitement as this whole community that you’ve built. When you received your Ph.D. there was a worldwide, community-centered “Hurrah!”

M: Yeah, it was fun. I’ve heard from people … I think I handed in my thesis for printing just before SIGCSE. And I heard back from people saying, “Well, this was mentioned.”

B: Yes, yes, yes. Can you … we’ve covered most everything. We’re getting kind of down to the end of the interview. One of the things … were there any particular challenges that you think you’ve met. You know, big walls that you had to overcome. One was, I think, the professor who didn’t value education and supported your friend. And didn’t value … generalizing formal methods rather than a product. That was a wall.

M: There was … when I think back there’s one time when I felt hindered by not having a degree.

B: Oh, okay.

M: Or actually by not being a professor, because that was … there was … there were … there’s this rich family in Sweden. And they had decided that they were going to sponsor a collaboration between Stanford and Uppsala and KTH and another medical hospital in Stockholm. So I was actually part of writing up what this collaboration was going to be about. Then, at the next step, when it was time to actually split up money to put people in place, I felt totally sidestepped by politics and by not being a professor. I really felt handicapped. So even though I … we had the collaboration with Grand Valley State; we had experience with running international collaborations on a grand scale. At that time we had … each year typically a hundred students working together in an international collaboration. And that was going to be part of what this project was going to be about. And yet they were sort of like … yeah, I felt frustrated. Let’s put it that way.

B: Yeah, yeah. But now you have a Ph.D. behind you. Will that qualify you for professorship?

M: Well, it’s … actually you don’t need to have a Ph.D. to get a professor.

B: Ahh!

M: There are examples of people who have been brought in from outside who have actually become the professors and later on actually getting a Ph.D., more or less for fun, I guess. But there is no formula. I’m not quite sure. Or put it like this: If you … within academia, you can’t go that way. You have come from outside and you have to be a special case. And then you can be.
So now there is … Yeah, I can go forward on an academic career. The next step in Sweden would be a docent [position]. One of the … well, the most famous professor we have at the department, he actually asked … because Arnold got his … made his docent-lecture just a couple of weeks after I had my Ph.D. And this professor came up and asked me if I was doing this. Because he thought it was … well, since I’m actually more or less overdue doing a Ph.D., he thought I was doing it for fun, to actually get the docent [title] as well right away, which I didn’t.

B: You did?

M: No. I didn’t. No, but I’m probably going to write together … write up trying to apply for that.

But there is … another reason is that there are European grants that are based on … there is one junior research grant for researchers between … who have a Ph.D. that’s at least two years back and not more than seven or eight years back. So in two years …

B: You will be a young researcher.

M: I think I will be a young researcher [Barbara laughs]. I hope that my record would be a bit … making me in a good position to apply for those grants.

B: That’s a wonderful story. We’re going to completely shift gears. Tell me some of your current outside interests and the role of your family. Things that are outside computing that affect you.

M: Well, one of the things that happened that … Well, if you go back to 2001, that’s where I turned 45 and most of the people who went to Cleveland with me [as exchange students at Case Western University] also turned 25 … oh 45. [Barbara laughs]. So I think it was in May we met, maybe at my birthday or something like that, and then in August we met again — there was the birthday of someone else — and his wife said, “Have you seen Ove?” And I said, “Yeah, he was around.” But what she meant was that he’d lost like 20 kilos between May and August by starting to run. And I guess that made me think … because I had been skiing before, but then getting to university and all that, I just didn’t do it. I did ski the Vasaloppet — that’s a 90K race that ends in Mora.

B: I’m familiar with that race, yeah.

M: So I did run it four times in the early 1980s.

B: Uh huh.

M: So, I wasn’t really in the shape I was when I was competing, but I was in pretty good shape. So but since 1985 I hadn’t been doing much training. I mean, when I did start I got a sore foot or something, sore knees, and I stopped. So in 2001, in August, I decided, “Well, now I need to …” I also, we have the department on the fourth floor and actually getting out of
breath going up [the stairs] didn’t feel right. So I started to say, “I’m going to run. I’m not going to run hard. I’m just going to start running for the sake of it.” And so I’ve been running pretty regularly since then. And now when I … one of the things I got at the party after my defense was the department has given me a start in the Vasaloppet again next winter.

B: A what?

M: They have paid for my registration to …

B: Oh, to do the race!

M: … to run the ski race again. The ski race. So I guess I need to get back to ski training again.

B: Well, since you brought it up — and, again, there will be a lot of non-Swedes listening to this — that race has a historical significance, if I remember.

M: Yes.

B: Do you want to just …?

M: The basic story is that … I think it was Gustav Vasa, the Swedish king, in 1520 he went up and tried to gather people to come and fight the Danes, who also had been invading Sweden. And the guy, he tried to gather people in Mora and they said, “No, no, no, we don’t want to do that.” And then he fled towards Norway. And the story is that these guys decided, “No, no, we need to actually fight!” So they ran after him and they caught him just before the Norwegian border and then they brought him back.

So in the 1920, I think, they started to think, “We need to celebrate this in some way, because this is one of the great stories!” Because Gustav Vasa, he was a good storyteller. He actually made a lot of stories about — half of them are probably not true at all! — about the way he was doing in order to protect himself or to get the people to come and fight the Danes. So they decided to have this ski race from Sälen — it’s on the Norwegian border — down to Mora. So it’s a 90K race. And it’s been running — except for two or three years when there hasn’t been enough snow on the first Sunday of March — every year. There is for the main race — that’s the first Sunday of March — there are like 17,000 – 18,000 skiers that start in it. So it’s just amazing to see.

[80:58]

B: How many finish?

M: There are … I think that, typically you would … I think the dropout is like … somewhere between 1,000 and 2,000.

B: Oh!
M: I mean some of them aren’t really prepared. Some of them really get blisters. And some of them just don’t … It’s a pretty … it’s not a bad … most people actually do finish.

B: How long does it take?

M: That’s a problem. When I did the skiing in the early 1980s, my best time was five-and-a-half hours, something like that. And the winners were typically doing it in 4 hours. It varies based on what kind of conditions …

B: What do you anticipate your time will be this year?

M: The problem is like at that time I was actually allowed to stand the second section. And I think that there are at the moment, they have ten sections, based on your sorting. And since I haven’t been skiing at all …

B: You’ll be with the slow guys.

M: … I’m now put in the last of these.

B: Yeah.

M: And that’s going to be … I don’t know how many will stand there, but when I … the thing is you start by two kilometers on a field and then you hit a mountain. So it’s like … and things get really rough, relatively narrow and things slow down. So it’s like a cork, it gets clogged up totally. And so if you’re in the way back, you’re going to lose half-an-hour, an hour before you get there. And even standing in the second line, it was sort of getting slow. So, that’s my excuse for not …

B: Well best of luck and now you can say it was because of…. You told me both your daughters are in engineering.

M: Yes.

B: You want to talk anything about them?

M: My oldest, Sara, she’s doing this systems in technology and society. So that’s an engineering program that the previous headmaster, he …

[A siren test sounded outside the conference center, so we have deleted the parts of this section that are unrelated to the interview itself.]

M: No, I was saying, he [the previous headmaster] wanted the engineers to be more broad-minded. So he said, “We’re going to start this and I want roughly half of the classes to come from the social sciences.” And I think this program has been good. I really like it, because they do … partly because they attracted more women. Relatively half of them were women,
which is certainly not the case for the IT or some of the others. And it really placed
technology in a context. And they also get training in expressing themselves. So they are …
Well, there is this sort of tension, I guess, there. “These aren’t real engineers,” some say. But,
at least when Sara got out, she got the same salary as other engineers would get. And they’ve
also been doing some studies and these students really get … they are pretty … they get
positions and they are pleased with the positions they get. So that’s … I think it’s a good
program. It’s … and I think it mirrors some of the things I … I mean, in my thesis, I’m
talking about competencies. I think we need to broaden up, open up the eyes of our
engineers, that there are … you have to think about where to use your engineering skills, or
your computing skills. You have to be able to communicate. You have to understand the
society in order to be heard. So I think these students … so it’s been kind of interesting to see
her go through that.

My other daughter, Hanna, she’s a bit halfway over in engineering … or in energy systems.
And it’s also been a bit frustrating to see. She’s struggling more, I think, because that’s more
of a traditional engineering program. There is less time to officially understand things and
she is more of a kind who wants to understand. And that’s pretty annoying to see someone
wanting to understand and that’s actually hurting the study results. So …
But I think it’s interesting to see the education through the eyes of your children, because
they are … I mean they’re important persons in your life. It’s kind of … yes, you’re not
objective about what they see, but again it’s … I think there is some insights one can get
from actually seeing what’s going on there.

B: How has your family support through this last going through the Ph.D., I mean, were
they …?

The issue of support from families … it’s a relevant question though. Because I think when
you look at the typical Ph.D.s, there is … it does take a lot of energy and focus. And
probably makes people distance themselves from ordinary life for a while. But I didn’t feel
that in my case, because I was just more wrapping up something. This was … I mean in a
way I had more time. I slept more than I did before.

B: Yeah! It sounded like it was quite a good two months, the finishing up was.

In the very end do you have any piece of advice that you’d like to tell the world?
M: Well, I think it’s … I think to keep the eyes open. I mean, I think there are so many
opportunities out there and trying to learn from what others do. I mean, they … it’s probably
nothing you can take right away — you can’t use it the way they are using it — but there are
reasons for why things are done. And trying to understand them is probably a very useful
way for you to grow in where you are, in your place.
B: Would that advice be different to a young woman? This project started as a way to
encourage women and you have done a wonderful job of encouraging women. I’ve
watched that. So is there different advice you’d give to a young woman, to your
daughters, to other women interested in technology careers from that you offer males.

M: Hmm. No. I think … and also if you talked … I would advise to really … to do things that
you believe in, people … things that you actually are interested in. Try to do things … well, I
mean I try myself to sometimes force myself to do something that I didn’t feel quite — force
myself, that’s maybe not the right word — but it’s been so much more fun to do things that I
believe in and that I feel is important and that I’m interested in, really interested in. I mean,
it’s like you … it’s like whenever … and if you work with something and you meet someone
and you don’t feel like you want to talk about what you do, you should start thinking about,
“What am I doing?”

B: Mmm hmm. Mmm hmm.

M: I mean it’s like … I think here [at the ITiCSE conference], listening to presentations, meeting
people. There is almost always something relevant, that feels like, “Yeah, I want to know
more about this.” Or, “I want to talk about what I’ve seen that’s relevant to what they say.”
And it’s … I think it’s also about reading. I mean … well, at least if one after a while doesn’t
really feel an urge to read more or want to … then maybe one should rethink what one does.

And for females, I don’t know. I mean, it’s like … well, to me, I think … there are things that
are … well, if you make a difference. I mean, I think that’s … some say that’s something that
appeals to girls more than to boys. Or maybe not that, but if you don’t appeal to usefulness,
boys can cope with that better than girls. I think that’s probably … there’s some truth to that.
And there are opportunities here. I mean there are ways you can get …

B: So you’re really essentially saying, “Pursue your passion and stick with things that you
can be passionate about.”

M: Yeah, that’s what I’m saying. And also that … I mean just realizing that there are a lot of
those options in our field. And there is a lot of need for putting technology in context. And …
yeah, to know more about how this works — it’s a field that needs a lot more working. And I
think it’s something that quite a few other people who come to conferences like this are
already good at. And especially if they dare to step outside of the natural science way of
doing research. Because, there are other ways and they are also … I mean, they might not
end up with a definite number as an answer, but there are methods that are useful, even
though they aren’t based on science, natural science.

B: Well, this has been an intriguing interview. I thank you so much.

M: Well, thank you. It’s been fun.

B: Thank you.

[93:09]