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Dershem, Herbert L (computer science) Oral History Interview: Science Professors at Hope College

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Interview with Herb Dershem, Computer Department
Interviewed by Brian Williams
August 4, 1987

BW: I'll start off by asking you what brought you to Hope.

HD: I came to Hope in 1969. I had just completed my Ph.D. in computer science at Purdue. I was looking for a small, Christian liberal arts college to teach computer science at. When I looked around, I interviewed at five different schools and one of them was Hope. Hope was the one that attracted me the most. One of the biggest factors that attracted me to Hope was the fact that if I came here I wouldn't have to also run the computer center, which at most other schools in those days that was a combined position. I would have had to not only teach the computer science, but also run the computer center. So it was the opportunity to come here. It was a position within the math department, because there wasn't any computer science department. It was a position to basically teach the one computer science course that they offered within the math department, which was a beginning FORTRAN programming course.

BW: So that was the first course that was offered here?

HD: Yes.

BW: They had the IBM 1130, is that correct?

HD: Right.

BW: How long did they have that one, do you know?

HD: I believe we got the new Sigma 6 in 1974. I think that was the year, somewhere in that period of '74.

BW: You got a NSF grant to create something for the classroom, or teaching computers?

HD: In 1971, Elliot Tanis and I got an NSF grant for combining the teaching of computers

and statistics.

BW: I guess that was Jay Folkert that got the 1130?

HD: Right. That they got in the '60s, I think it might have been '68 or something like that. Before I came, that Math 27 course had been taught by Brockmeier. He was the first one to teach computer science courses here.

BW: When did it first become a department?

HD: The department began in 1974. The 22nd of March, 1974, is the document that was a proposal to do that. It was a committee that had seven faculty members on it. It was headed by David Marker, who was actually the first chairman of computer science here. It was an interdisciplinary committee that had three people from the physics department, two from mathematics, one from psychology, and one from business administration.

BW: So it had just been an informal department?

HD: There hadn't been any department up until that time.

BW: So it's just within the math department?

HD: Courses had been offered as mathematics courses at the time.

BW: How long did we have that Sigma 6 then?

HD: Well, the VAX came at the beginning of 1983, I believe. So it was essentially nine years. I don't recall, it might have been '73 or '74 that the Sigma 6 came. I don't recall. You might want to check that on other records to make sure of the dates.

BW: Deciding on the VAX was a little bit difficult, wasn't it? Did you look at a lot of other ones?

HD: Yes, it was quite a long decision making process. In fact, we had originally chosen another system. Then when the computer center staff was beginning to try to convert the programs from the Sigma over to the new system, found out they were unable to do that. So then we quickly cancelled the order for that system. We studied the whole thing and decided on the VAX. That was quite a lengthier process than we wanted it to be because we essentially went through it all and made the decision once, and there we had to do it again. It takes about a year to go through that whole process. That was difficult.

BW: Do you know anything about the purchase of it? Was it done through grants or...?

HD: I really don't know a lot of the details of that. I'm sure there were some grants involved, but there was also a lease purchase arrangement where they let paid it out over a period of years, and we're just now finishing paying for parts of it because it was a five year agreement, so they did it at three different times. Since it began at the beginning of '83, then the beginning of '88 would be about the time when the leases start running out.

BW: Are there four VAXs? There's an academic one...

HD: Yes, there's actually at least five VAXs on campus, because there are two academic VAXs, one administrative, one physics, and they also have a microVAX that they got for the development office. So two are really administrative, two academic, and one physics research.

BW: Do you know what prompted the move to Durfee? Did they just outgrow this?

HD: Well, I'm trying to recall. I guess that all happened when I was on leave. I don't

really know the rationale behind it. I guess partially is the fact that when the new system came in, they had to been able to run it along with the old system. So there wasn't room in the computer facilities here, plus the fact of the space crunch in this building. The place where the computer was, was kind of prime academic space that could be used in this building, whereas the computer doesn't have to be in a prime academic building like that, taking up prime academic space. So the concept was that we move it to a facility that wouldn't be in an academic area, that would free up this space which is now what we use for our terminal room, and for our microlab downstairs. Also, the entire physics computer lab down there as well and the physics lab. Those rooms have been put into much more useful space for students, where students work now, whereas where the computer is, is not where students have to get to easily, so that can be stuffed off in a corner somewhere.

BW: Had there been a major prior to it becoming a department in computer science?

HD: No.

BW: When this came about then you could get a major?

HD: The department existed but didn't really have any faculty at that stage because of the fact that it was created as a joint department, which meant that all of its faculty were shared with other departments. So we offered a major which students could get, and courses that were called computer science for the first time.

BW: I saw from the catalogs that it went through a lot of changes, different heads, and things right off. Marker was the head of it for awhile. Then when did you take over?

HD: I'm not sure exactly what year that was, probably from the catalog you could tell best, because I don't know. We did a couple of years, I think, at the time that it started, then I was the head of the department. At the point when the department started, then he was the dean of the sciences. Sort of heading it up by being interdisciplinary. Then he became the Provost, where he really didn't have time to be involved in the day-to-day activities of the department. I think it was summer in that period that we decided that I take the chairmanship of the department.

BW: Did it get going right away even through it was a department, or did it take awhile to...?

HD: It was pretty well going right away. We graduated our first major in the class of 1975. Bob Myers was our first major, class of '75, and then I think we had six or seven majors in the class of '76, and then it went on from there. He was unusual because he had a number of the courses before the department was even formed, and to put together a major already. He graduated within a year of the time of his proposal. He was the very first major.

BW: Do you know what he does now?

HD: Yes, he works for Zondervan Publishing as a systems analyst, out in Grand Rapids.

BW: What would you say some of the advances that have happened since you've been here? The major ones?

HD: You mean in terms of the curriculum or the equipment?

BW: I guess both.

HD: Of course, getting of the VAX has been the biggest change in our curriculum, and

then the impact of microcomputers certainly have been a big impact in recent years. In terms of curriculum, the biggest changes have been the growth of the area. I guess there's another part of the story of the department there that should be a part of the history because it was originally then an interdisciplinary department. Then it was in...let me look up the year to make sure...the original proposal was in January of '73. The math department proposed to divide the course offerings and that was probably the first step in dividing the department's course offerings into two groups, one for mathematics and one for computer science. Then we offered a major in mathematics with computing emphasis. I guess that was probably the first step, in '73 when the math department split up its offerings. I don't know if you would like to have copies of these original proposals?

BW: Yes, I might do that.

HD: This was another memo sent from Elliot Tanis and me concerning splitting these up, and these were the first courses that were offered that were titled computer science courses. Then you may have seen them from the catalogs, starting from '73 and '74, they should have had under mathematics courses and then computer science courses listed. This is the original proposal on the offerings on having a separate department. That resulted from the fact that when we began offering computer science within the mathematics department, the other departments said, "Some other departments have some input as to what computer science really is. We don't think mathematics should have complete ownership over computer science." So the solution to that was to form a separate department that would not be exclusively mathematics, but that they would

have participants from various departments across the campus. So that was the real impetus for forming a computer science department. Then the next step in that was in....

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(start of side B)

HD: In '79, it was a proposal again from Elliot Tanis and me, and the proposal was that the computer science department and the mathematics department be merged together. The four reasons are given here. One was that the two programs of the departments have been merging automatically. There's a growing use of computers in mathematics. The merging of the two departments would provide additional flexibility in course and faculty scheduling because separately they were smaller departments, and if put together they would be more. A bigger department had more flexibility. The concept of joint appointments had not been successfully implemented. It was not satisfactory having the joint appointments because computer science was never able to get enough of the faculty members' time. They always had their primary duties in the other department. The fourth reason was that the development of the laboratory in computer science would be facilitated by this. It would be a bigger department. The mathematics department had money. The computer science department didn't. So for various reasons. So that was the proposal. The response from the Dean and the Provost was that they didn't want to do that, because they wanted to keep computer science visible. Then the result was, on March 21st, '79, the memo from Dean Wettack stating that it was best to maintain the visibility of the computer science and

mathematics program by retaining separate labels for each of the departments, and separate persons designated as chairmen to the departments. That is, there would be one person designated chairman in mathematics, and one person designated chairman in computer science. The catalog would still imply two separate departments, with the two separate chairmen. However, it would also be best to shift some of the administrative responsibilities of the computer science chairman to the desk to the mathematics chairman. It also said that the evaluation of faculty in the computer science department would remain the responsibility of the computer science chairman. In addition, all matters dealing with the development of the computer science curriculum would remain under the leadership of the computer science department chairman. This person plays the leadership role in computer science for the future. It is further understood that Herb Dershem would remain chairman of the computer science department. A chairman for the mathematics department will be decided upon at a later date. The concept was that we would continue two separate departments for external purposes. I guess my main motivation for that is, as the chairman, we were essentially a two-person department. When you're chairman of a two-person department, there are certain duties that you have to do as a chairman whether you have two or twenty faculty members. It seemed to me to be a lot of wasted effort to have to spend that time doing those duties with just a two-person department. So my concept was if we merged together, that would be a better economy. I won't have to do that for two people to get back to the nine or ten person department of mathematics and computer science. So that's the way it went until 1981. Then in '81, there was

again a proposal submitted by the math department that the two departments be completely separated. The reason that that came about was at that point, computer science had grown to the point where it was enough to become a separate department. It was becoming more difficult to stay within mathematics, but it was growing so rapidly we needed to recruit our own faculty and grow. So then we split off at that point. We were going at about three to four faculty members, and growing eventually to the point where we now have four full-time faculty members. But then that was just a couple years after we merged together, and then we split back up again. Which is how we've remained since that time. Let's see, I guess that was actually two years later. I guess that came again from a proposal that I made that that would be a viable approach to take. We were growing so rapidly in '79, we didn't anticipate the rapid growth that was coming in the early 80's. So then we grew to four faculty members, full-time. We had been approved for two years to have five, a fifth faculty member added. Then we were unable to hire the fifth person, but eventually the enrollments got back to the level where we now were authorized for four anyway. We had a fifth approved faculty member, sort of a virtual faculty member there for a couple of years, but never actually hired that fifth faculty member. So I guess that the ideas that we are a separate department has sort of come and gone. I just reviewed this a couple of years ago with the chairman of the department at Wake Forest who had asked about whether we had a separate department and why. I got a scenario of all of this on why we split and why we merged, and so forth. That basically is everything that we did.

BW: How does this program rate to another four-year school, undergraduate, for

computers?

HD: We have a lot stronger program because of the number of faculty that we have. The common thing is for the computer science to be within the mathematics department at a school like Hope. It's unusual for it to be a completely separate department. I think that gives us a different kind of identity. It gives us the ability to recruit stronger faculty members and the ability to have more autonomy in our program as opposed to having to be tied to what the mathematics department would do. Out of all the GLCA schools, Oberlin is the only other one that has a separate computer science department. All of the rest of them either have no computer science or have it within the mathematics department, the department of mathematics and computer science. So I think we are unique in that sense. We are unique in the sense that we've had a program for thirteen years, which most schools have only had them for five years or less. So it is a mature program. It's a very strong program. I think the trends are that '83 or '84 was the peak in enrollments in computer science. There have been considerable drop offs since that point. From the late '70s, early '80s, we were growing at an annual rate of about twenty percent a year in our enrollments. Now, we've dropped back to about the level of enrollments we had in 1981. We're dropping at a rate that is fairly rapid now, although I think we've levelled off that dropping. In terms of comparison with other departments, that we, having a separate department, will have a more stable kind of a program. The college has a bigger commitment and it's less likely in times that are tougher in terms of enrollments that they're going to drop the program. If it's just a part of another department, they'll

say, "We don't have many students taking that anymore, so we just won't hire faculty members to teach the computer science courses anymore." I think that we have a stronger commitment to that program than other schools.

BW: Is that decline a part of a national trend?

HD: Yes. It is a national phenomenon that is happening everywhere, including in the high schools. A variety of explanations--one of the major things is that career interests go in cycles anyway. Computer science was riding a very high one in the early '80s, and it was due to come down anyway. Some of it too, is the glamour that went out of the computer field, if you think back two or three years ago when you could walk into virtually any department store and see computers prominently displayed and sold. Those have been taken away, probably half of the computer stores that were open three years ago have since shut down. They're no longer in business. The whole interest in the computer field has declined as has its popular image. And another one is, too, that students are getting more and more exposure to computers in high school and not having to wait until they come to college. This has a couple of effects. If all they needed was that exposure, then they get it in high school. They don't have to take computer science in college. Another potential effect is if the introduction in high school isn't very good, it might turn them off to the field, and they don't pursue it any further. I don't know what all the reasons are, but the job opportunities are just as strong as they always were. So when students come to see me who are interested in a computer science major, I tell them that four years down the road, it's going to look very bright because of the fact that the pool of students coming out has dropped

way down, but the jobs are still going to be up here. That's going to be a very bright prospect for them in looking for jobs, because there are going to be plenty of jobs out there. So it is a national trend. I don't know where it's going to end or how far it is going to go. We're devoting quite a bit of effort in our program, in terms of recruiting students and getting the message out to students now, that computer science is a good career to get into.

BW: How successful has that been, recruiting?

HD: We've managed to keep our enrollments at a level for the last year, and now we'll see this coming year, we don't know. Depends on the freshman coming in. I think we have a good crop. We'll probably be running at about half as many majors as we had at the peak, but our goal then is to have the half that we have here to be as strong as the top half of the ones that we had here before. We had around 30 majors at our peak. I think our biggest year was 29. This year we're probably going to be 15 or 16. Next year's junior class will be even smaller, probably our low point. It was at that point that we realized that things were going in that direction so radically and we made some efforts to turn it around then.

BW: But you can get quality students still?

HD: Yes. Definitely. At the point of highest enrollments, I think the quality of student was down some, because there were students who were going into computer science just because they knew it was a hot field. They could make money. They didn't really enjoy it. They weren't really very good at it. If they can stick it out and get their 2.1, whatever grade point average, and they could still go out and find jobs.

Students aren't doing that any more. So the students that we do have that are in the program are better quality than we've had in the past.

BW: When we got to move from the Sigma to the VAX, had we just outgrown that system? Or was it outdated?

HD: Yes, both. It was outgrown and very outdated. It gets to a point with computers when they get so old, it costs more to maintain them than it would cost to buy a new system. It's kind of like a car, although I don't think cars ever actually reach that age--the difference in new and used cars, but sometimes it just costs too much to keep it running. That's the way it goes with computers. The maintenance goes up phenomenally as they get older, particularly because the companies don't want to have to support them anymore. So that's their way of encouraging you to buy a new computer, rather than continuing with the computer that you've got, is to make that maintenance costs so phenomenal that you say, "I think I'll buy a new one then."

BW: And that was the same with the first IBM?

HD: Yes, well we definitely outgrew that one. That was a very small system.

BW: Did the Sigma use computer cards too?

HD: Yes, it used cards, but it also had terminals. The IBM only used cards. There weren't enough terminals at that point. When we first put the Sigma in, we had two terminals that sat out in front of the window of the computer room. The computer room was located down where the microlab is now. It had a picture window in there so people could look in at the computer. The two terminals were sitting right outside that window. Terminals were running at 110 Baud, which means that there were ten

characters per second. Whereas our present terminals we have, some that run 120 characters a second, and some 960. People think that the 120 ones are slow. Although when you go at only ten characters per second, that's really slow. They were on what was known as teletype machines, which...do you ever hear the news room and things like coming over the teletype, there's a very loud clackity kinds of machines. Those were the kind of terminals that they used in those days. Somewhere along the line there in the '70s, I don't know when we got our first 2 CRT terminals. That was a real breakthrough then, being able to just flip on the screen and get your output, not have it make any noise at all.

BW: Are you having any part in putting the new terminals in the library? They're going to put new terminals in there I guess.

HD: Yes, I don't know what all is going to be involved. I hear there is going to be a pretty large group of terminals over there.

BW: Have you taught other things like math within the department?

HD: Yes, when I first came I taught math and computer science. Since there was only one computer science course, then I spent the rest of my load teaching math courses, so I have taught math. Then when the departments split up into separate departments, then I seldom had time to teach any math anymore, but up until that time I did. In terms of the NSF grants that we received, maybe in addition to that statistics one, we received one in...In 1978, we received a grant from NSF for the development of a modular introductory course, course development work. In the preceding year, Brockmeier received a grant for developing his scientific computer programming

course. Then we received an equipment grant. That one must have been around 1980. That was actually combined mathematics and computer science, to buy microcomputers.

BW: Have the grants been important to this department?

HD: Yes, they have been a very big part of what we have done in the department. Then there was a Pew Grant that was received by the entire college that enabled us to purchase our tower mini-computer system that we presently use. I think that grant was about 1981 or '82. Those were some of the big grants that have helped equip the department.

BW: There are still grants available?

HD: Yes, in fact we have a very large proposal in right now for a research grant with Mike Jipping who is going to be our new faculty member. He will begin this year. He has a grant in for over \$100,000 for research. We have a proposal for an NSF grant for establishing a connection to a network called CSnet which will tie us into other computer science departments around the country.

BW: There are these institutes. Have you been connected with that?

HD: No, I haven't really been connected with those at all.

BW: Do you know when you started? Just few years back, isn't it? For the computer department?

HD: Oh, you mean the summer institutes? Yes, sure. Let's see, this is the third year that we have had the computer science institute. So it started in '85. One of the basic purposes for starting this is that, we also at about that time had approved a major for

secondary certification so that teachers at a secondary level can be certified and teach computer science. That just became an approved major by the state at the time. We right away had our major approved for that. One of the purposes of the institute has been to have teachers who are teaching computer science come back and complete that major so that that can be on their certificate that they are certified computer science teachers. Last summer there were two teachers that completed it. This summer there were two other teachers that completed it. So, four teachers that through the summer workshops completed their certification.

BW: Do they stay all summer?

HD: We haven't had any that were residential on campus. They take courses for most of the summer, but they've all been from fairly local. They may come from as far away as St. Joseph and Grand Haven. Those have been the extremities of where they come from, the Grand Rapids area. The first two years it was a ten-week program, two five-week sessions. This year we cut it back to one six-week session. That, like the other enrollments, has dropped off. We try to also serve, as the brochure says, the high school students, people who want to come back just to take courses, to get into a new career, and also the regular Hope College students who might want to pick up a course during the summer. It was actually begun back in the days when we were more toward the peak of the computer science enrollments, and we have expected that there would be increasing enrollments, whereas the enrollments in the summer institute have really stayed about the same.

BW: Is that funded through NSF?

HD: No, it's all funded by the fees that are paid by the students who attend it. It's a self-funded thing. It's actually just a special part of the summer school program here.

BW: How do you feel the administration has been to the computer department? Have they given it enough attention?

HD: Yes, the administration has been very supportive. It's been very helpful in our growth, they're very understanding of the special problems of computer science. I think it is because of the cooperation of the administration that the program has been successful. We have had great cooperation all the way along.

BW: I guess Vander Werf wasn't here too long for the start of computers, was he?

HD: No, Van Wylen was the one who...Vanderwerf was the president when I was hired. He's the one who hired me for the development of the department. President Van Wylen was the one who did that. When he came in, he recognized immediately that our computer facilities were less than what we needed. He made the statement to the faculty who were interested when he came in that when he formed a committee to choose the next computer system he said, you choose what we need and don't worry about how much it costs. Pick out what we need and I will go out and I'll raise the money, and we'll pay for it. We did, and he did fulfill that promise and that is when we got the Sigma 6 computer. Which was quite an advance for a college our size in those days to have that kind of a computer system.

BW: Was it difficult to build a new department or did it really carry over from how it had been under the math?

HD: The hardest part of the department was the interdisciplinary aspects of it, and as soon

as we more or less abandoned the interdisciplinary part of it, then it went more smoothly. Because the biggest problem with the interdisciplinary approach was that we never had the computer science faculty that we needed. Because they always had a primary commitment to the other department, and if they were needed more for teaching more classes in their primary department, that's where they had to go. The computer science department only got what was left over. So it pretty much had to work out that your computer science department had faculty itself. And when we did that then things went quite smoothly. The biggest difficulty we've had over the years has been recruiting faculty because there is an extreme shortage of faculty members in computer science. And those that are faculty members are also in great demand outside the academic world too. So we also have a great turnover of faculty members. I don't know if you have traced through the members of the faculty in computer science, but it turns over quite frequently. That is definitely because of the number of opportunities people have. They are attracted away by higher paying jobs. So we have had a great deal of instability, yet we really feel happy with our present situation because over the last four of five years we have had a very stable...We've got Gordon Stegink who has been here for six years now. Bruce Dangremond who just resigned had been here for six years. So we have had a great deal of stability more recently, but up until that point it has always been hard to establish the department because there has been so much turnover of faculty members.

BW: Is it hard to keep up in this field because the material is changing faster?

HD: Right. That makes it an extra challenge, but it also makes it especially enjoyable.

You've always got that challenge. It certainly is not the kind of a field where you ever teach the same course twice. Your course changes every time. But it is exciting to go in a classroom, an example will be this fall I'll be teaching a course in algorithms. We will introduce to the students algorithms and then be able to tell them, "Well, this algorithm was actually discovered in 1982." And then they think back and think, "Gee, that's something that I could have done." We are right on the forefront of the field because it is developing so fast, and in many of the fields we are teaching technology and concepts that were not even around when the department was formed. Probably 90% of the field didn't even exist when I was in school. It is a very rapidly changing field, but that makes it exciting. But it makes it very difficult to keep up.

BW: So what has kept you here in spite of all the turnovers and opportunities?

HD: I guess the biggest thing that keeps me here is my commitment to what the college is all about, and also the enjoyment I get out of working with the students here. Those are the two biggest things. I certainly never would have expected when I came here in '69 that I was going to be here 18 years later. But when other opportunities have arisen they just haven't looked as attractive as staying here.

BW: That's all my questions unless you can think of anything else to add.

HD: I can't think of anything else. I can go down the hall and run off some copies of some of these memos if you want to take those along to have and show records.