

ROB LELAND

April 13, 2002

Jeff Charnley,
Interviewer

Charnley: Today is Saturday, April 13th, year 2002. We are in the Union Building on the campus of Michigan State University. I am Jeff Charnley interviewing Rob Leland. This interview is part of the MSU Sesquicentennial Oral History Project, commemorating the 150th anniversary of the university coming up in year 2005. Mr. Leland is here on campus this weekend attending the first reunion of the Alumni Distinguished Scholars Program, and recognizing the founding of the Honors College in 1956.

You can see, Mr. Leland, we've got a tape recorder here. Do you give us permission to tape this interview?

Leland: I do.

Charnley: I'd like to start first with a little about your family background and educational background. Where were you born and raised, and where did you go to school before college?

Leland: I was born in Buffalo, New York, and raised in a small town outside Buffalo called Williamsville, New York. I attended Williamsville South High School—there were three high schools in Williamsville—graduating in 1980—I guess 1981 actually; I'm sorry—and attended Michigan State University the following fall.

Charnley: In your high school career, who was it that influenced you the most to go on to college? Did you have a role model or encouragement?

Leland: Well, I would say the biggest influence would have been my parents, but I gather you're asking about teachers at the high school.

Charnley: No, it could be parents.

Leland: Both my parents went on to college and they were the first people in their families to do so, and so it was just sort of part of our family culture that it was assumed that we would do that. They didn't pressure us to do so, but of course by example and just general demeanor, it was obvious that I was expected to do that.

Charnley: So it wasn't a question of if, but just simply where? Where and when?

Leland: I don't mean to imply any tension there. It's something that I always aspired to and looked forward to as well.

Charnley: Why did you consider Michigan State for your undergraduate education?

Leland: I had known a friend of my sister's—she's about four years older than I am—his name was Gary Hnath, with an "H," H-n-a-t-h. He had been an Alumni Distinguished Scholar, so I was aware of the program and got interested in Michigan State as a result of his experience,

which was favorable. I subsequently was a National Merit Scholar—well, finalist in the end—and so I was invited to come during high school to take the exam. I met with the Honors College advisors and was very impressed with the level of interest and attention that they showed. So that started a process of reflection on my part. I had opportunities to go to many other universities, so I was really struggling with that decision. In the end, I decided that this would be the best place because I was convinced that the Honors Program would make a big difference in my education.

Charnley: Was that your first time on campus?

Leland: That's why I was a little confused about semi-finalist versus finalist. In my junior year, if I recall correctly, I had been identified as doing well in the preliminary SATs—I've forgotten exactly what you call them. So I got an invitation, and I think I came out my junior year to look at the campus and meet with the advisors at that point. But I'm a little—actually, the truth is I'm a little fuzzy on those details at this point. But certainly the thing that made the really big impression was the time I spent with people during the exam. I met with Scott Vaughn, I remember that very clearly. He's one of the advisors in the Honors College still, and he had a big impact on my time here.

There's a little bit of a funny story there, because when I finally had made the decision to come here, I showed up to my first appointment with a full four-year program, specifying everything that I wanted to do, because I was very interested in studying a lot of different subjects. I wanted to do engineering, electrical and aerospace engineering, and I also wanted to

try to do pre-medical requirements, and as much as I could in the way of the humanities and the arts and sciences.

My father actually was trying to help me out because I was a little bit distraught about whether I could do all of this. So he got a hold of the course catalogs and sequestered himself at work one day and worked through all the prerequisites and all of the requirements and timelines and everything. He made me this long document that showed all the options on how I could fit it all in, and that was really a great thing. I think they still kid me about that at the Honors College. Of course I didn't follow the plan exactly, but it was actually very helpful.

Charnley: You had done your homework in advance.

Leland: I was very well prepared.

Charnley: What do you remember about the ADS [Alumni Distinguished Scholarships] test?

Leland: I remember that it was very challenging, very broad in its subjects. I had maybe half a dozen different subjects. I remember it being unlike the standardized tests where I had developed a certain amount of sophistication with those and had strategies and had gotten pretty good at those. But this was unlike any test that I had taken previously because it was so broad in its subject matter, and it was also a test of stamina because you really had to concentrate quite hard for three or four hours. I remember that it was somewhat demoralizing, actually, because I felt, "Well, I just didn't do very well on that." There were some of the questions I really was guessing at. So I remember the long ride home with my parents, who had driven over from

Buffalo with me across Canada. We were headed back and I was just very low and saying, “Oh, no chance I’m going to be getting that scholarship.” And then it turned out I did, and so that was very exciting.

Charnley: How did you feel when you got the letter?

Leland: It was just a very memorable day. I remember the room and the chair and opening the telegraph. It was the first time—I think the only time—in my life I’ve ever received a telegraph.

Charnley: You got a telegraph?

Leland: I don’t know how they do it these days. I came home from school and my mother said, “There’s a telegraph for you.” And she let me go and open that up privately and I got very excited. The truth is that she knew ahead of time because, I didn’t realize this, but apparently the telegraph people called up and said, “We have a telegraph to deliver.” And it was so unusual, she said, “Well, who’s it for? What does it say?” So they read it to her, but she was very good about not giving away the secret.

Charnley: That’s interesting. Were your parents supportive or pleased with that?

Leland: Oh, they were very excited. They had both gone to the University of Wisconsin, so their strong feeling was that Big Ten universities were outstanding. In Buffalo, and the town of Williamsville in particular, there is a very strong educational system and many of the people that

live there work at the university, so there's a pretty strong academic culture there among my peer group, and the belief there was you had to go to the Ivy League schools or you really hadn't made it. Possibly Stanford [University], let's say, as well.

Charnley: [laughs] That counted.

Leland: So it was not an easy decision for me because I did have the opportunity to go to some of the Ivy League schools, and there was a lot of peer pressure, essentially, to do that. But in the end I came to believe that this was going to be the right place to come, and I think my parents were very happy with that because they thought that I actually would have a more balanced life experience here than perhaps I would have elsewhere, and they thought, well, the education would be just as good. I do think that turned out to be true, because I did keep in touch with my friends who had gone off to some of the more prestigious schools on the East Coast. They were typically using the same or very similar textbooks, very similar material, but they were in much larger classes and much more isolated from their professors. So it just became clear to me in the first year of so that I really was getting an excellent education here.

The other aspect of that that I would comment on is that I also developed the view that the primary limitation on the education that I was receiving was me, not the institution, that I had plenty of access, so it was really just a matter of how dedicated I was to learn. And as I say, I feel that was borne out.

Charnley: How did your experience in the first couple years meet those expectations? Were you surprised?

Leland: Good question. It definitely did meet my expectations, I guess perhaps in some ways a little differently than I expected. I guess that's a convoluted answer, but I guess the really persistent image I have of that time in my life was just the excitement of learning so many different things. It was just such a formative period in my life because I was being exposed to so many new ideas, and I just felt like finally I was really getting into my stride and learning a lot intellectually, but also as an individual. I think that just the access to the breadth of subject matter and the quality of the teachers, and the general shared excitement of other people on the honors floor, where I lived, particularly my roommates, it was wonderful.

Charnley: That living/learning concept, which was prominent here at the time, did you thrive in that?

Leland: Absolutely. I think that was crucial part of the success because I thought I was having—because it made it seem like I was, in effect, at a university of a few hundred people instead of forty thousand, because in the classes I saw the people that I was living with and studying with and interacting socially, so it really amplified the sense of community. I think if I had just been a commuter, that would not have been nearly as formative, and I think if I have attended a university where the class sizes were much larger, I would have felt more anonymous. I remember calculating and my average class size was twenty-five or twenty-seven or something my freshman year, and that was maybe a third of what my friends were experiencing.

Also the professors were remarkably open. I have at times a very inquisitive side to my personality, and so I would go and talk to them after class or go to office hours, and they were very open to that. I think they really welcomed it.

Charnley: What were some of your early courses that you really enjoyed or had an impact?

Leland: I enjoyed them all, I think. Maybe one or two exceptions. Ironically, I was a little disappointed with the computer science courses that I took because they were much larger and we were taking multiple-choice tests, and it just seemed very impersonal and it was hard to connect to on an emotional level, and they were viewed very much as a filtering mechanism for people who were interested in majoring in that area. I did fine in them, but I didn't really enjoy them as much as I thought I might. It's ironic because I ultimately ended up working in that field, and have for a long time.

Some of the real highlights, I remember there was a very difficult physical chemistry course sequence, I think it was 181 Honors through 184 Honors, and then the companion laboratory was 185 through 187, I guess it would have been, and they were taught by very prominent people. It was physical chemistry, and I didn't really even understand what that meant. But they were taught at, I would say, roughly the junior level in retrospect, by senior people in the department. The first segment was taught by Professor Harrison, I think, James Harrison. He was this very avuncular man, sort of Mr. Rogers persona, but extremely sharp in his thinking and just a very engaging manner. He just threw you into the subject and made everything seem not quite so hard. I really enjoyed that.

I remember the laboratory. The first laboratory there, the first week, was determining the crystalline structure of sodium chloride using x-ray diffraction data. I had never seen anything as sophisticated as that in high school, certainly. We worked through the problem. There was this philosophy of problem-driven teamwork to complete the answer, which I felt was very successful. I think the key thing in that course was just the expectation was so high. I remember we started with about seventy-five people and I think we ended with about twenty-five people by the end of the year, because the course was very challenging, but it was also very uplifting and you really could feel yourself learning. Learning the Schrödinger equation and bringing to bear calculus and high school chemistry you had learned. I had taken AP [Advanced Placement] chemistry, actually. It was wonderful to be able to exercise your mind at that level.

I also remember, in connection with that, a laboratory segment with Paul Hunt, who was an Alumni Distinguished Scholar about a decade before and had gone on to become a Rhodes Scholar, so had a very impressive background. I remember his first assignment to me—I walked in office hours; it was kind of a one-on-one laboratory—he said, “I’d like you to learn Fortran [programming language]. Come see me next Tuesday.” I had had a little background in computer languages, but the concept that you would learn a new computer system and a new language and be productive in it in a week was rather intimidating. But again, it was just that expectation that this was a very serious thing, and you were up to it, you know? And sure enough, it worked out very well.

I remember one experience where I was trying to plot a potential surface with my program and I had, obviously, some bug in it and I couldn’t find him and I had gone to speak with his wife, Catherine, who was in the chemistry department as well. She was very kind and

helped me out a bit. I later heard from Paul that she said that my supposedly smooth and beautiful potential surface looked like the Pyrenees because it was so jagged.

Anyway, so again there was a sense of community. I'll complement that by saying that I remember Professor Gosberg, and also Professor Matthews and Pipes [phonetic] in the humanities department because I took the honors humanities sequence, and that was a wonderful experience as well. I just reveled in learning all about the culture of ancient Greece and Rome, and blending the literature with the history and the sociology. Professor Gosberg, again, was a wonderful professor who was very challenging and who invested time in me personally. He drove me to the bus station and would meet with me in office hours. That was exciting to me because I was an engineer in the humanities program. I remember later subsequently taking the philosophy sequence from Professor Garlich, and that was very, very influential as some of the most memorable courses I took as an undergraduate. He had this wonderful way of leading you through the arguments of the philosophers, and getting you to the point where with each new philosopher, you were convinced, "All right, this is the answer." And then when that two-week period was over, you would come to the next day, and he would, in the space of five minutes, rip the argument to shreds and say, "Well, I guess we'd better start over." So he was really wonderful at challenging you.

I ought to let you ask the next question.

Charnley: No, no.

Leland: Anyway, there were many more. I feel badly about the professors and classes I'm leaving out. Eric Goodman was a wonderful influence on me in the engineering department,

who was a mentor, who, when I started getting into the actual engineering courses after a year of so, took me under his wing and allowed me to do an individual research project probably the summer after my freshman year I started that. He included me on a design team, a programming team that was doing research in graphics; it was graduate students. He included me as an active member of that team and gave me opportunities to study the subject and contribute on my own. I worked late at night, and it was essentially a co-op program for me in R&D [Research and Development] work. Again, he was very engaged in my personal life and a real, a genuine mentor.

Charnley: Did you have contact with President [M. Cecil] Mackey while you were here?

Leland: I did. When I was a senior here, I was selected as a Rhodes Scholar, and so I had the opportunity in connection with that to meet with Professor Mackey. That harkens back to that time with Paul Hunt and I was inspired by his example and the example of Molly Brennan, who had been a Rhodes Scholar a few years before, to think of that as something I might pursue. Even though I was an engineer, because Paul had been a scientist and chemist. So I did that and I was wonderfully supported by Professor Gosberg and Garlich and Goodman, and all the people I mentioned and several other people in the Honors College. It was a real, in a sense, team effort behind me.

So I met Professor Mackey in connection with that. We actually did a television spot. Ron Tempus was selected that same year as a Rhodes Scholar, and that was very memorable because we had two in the same year from Michigan State. I remember because it was advertised a lot at the time. Harvard [University], that year, had four and the university with the

second most in the country was Yale [University], with two, and also Michigan State with two.

At that point we had had approximately ten or eleven Rhodes Scholars selected, far and away the most of any public university at that time. I would guess that's still true.

Charnley: I think it is.

Leland: So we did this little spot and I remember there was a humorous aspect of that. It was for the Cherry Bowl and it was going to be a commercial in the halftime segment there. Dr. Mackey was there with his aide and was handed a script and was reviewing it. They got the lighting all right and they put him in the middle and he was going to do a little introduction. He read his script that he had just memorized, and it all went very smoothly and well, and then they sort of thrust Ron and me forward and asked us questions on camera. You know, the zero-take approach. [laughs] "Wait a minute. Don't we get a briefing as well?" But it came out pretty well and we were interviewed by the alumni magazine with Dr. Mackey as well. I didn't know him well, but—

Charnley: Interesting. Your Rhodes Scholar experience, did you feel that your education that you got here prepared you well for that?

Leland: Oh, absolutely. And I think that if I had gone to MIT [Massachusetts Institute of Technology] or a few other places I won't mention, I think it's unlikely that I would have had that opportunity. That's something I reflected a lot on in my life. But I think that coming here to Michigan State really made that possible for me because of the balance that I was able to have in

my life as a result of coming here. I think if I had gone to MIT, for example, then I would have been too focused on my engineering studies. I would not have branched out into the other areas and had the influences that I did.

The other really important factor, I think, was that there was this sense of community and this culture of success in that regard in the form of the effort that went into the Honors College over the years, and that ended up having a tremendous impact on my life because I went and lived in England for almost five years.

Charnley: After you got your undergraduate degree, where did you do graduate work?

Leland: At Oxford University. I did a master's degree and a D.Phil, which is what they call a Ph.D. there. And I did that. The master's degree was in numerical analysis, it's called, the mathematics of computing, and also, in effect, computer science. And then I did my Ph.D. in a subject called parallel computing, and that relates back to Michigan State very strongly.

While I was an undergraduate, I did a summer internship at Argonne National Laboratory, I think following my junior year. That's something I was encouraged to do by Professor Goodman, and supported in doing that, and I fell under the influence of a wonderful physicist at Argonne named Gray Hagstrom [phonetic] who was in, at that time, the very new field of parallel computing, an idea that you would have many individual computers wired together and working in concert on a problem, so by dividing the labor across them, you could get much better performance within one computer. That internship blossomed into employment the next summer on a more sophisticated level at the lab there. Then when I was in graduate school in Oxford, I decided that's what I wanted to study for my Ph.D., and convinced them to

let me do that, to span a couple departments, and I had a good advisor who was willing to learn the field with me, because it was very new at that time. Then that is what ended up heavily influencing my job.

Charnley: Sounds like you took an interdisciplinary model of education and took it to England.
[laughs]

Leland: That's right, and that was a little uncomfortable for them, but they agreed that it was a good thing in the end.

Charnley: Have you had contacts at the university since you graduated?

Leland: Yes, when I was in England, I would come back frequently because I wanted to share the experience with my mentors here, and that's really one of the best things about having had that experience. It's such a good context in which to thank people for the help they'd given me. So I made an effort to come back probably every year while I was in England. Then when I got back to the U.S. in 1990, I also came periodically every couple years. I was last here last February, about a year ago, and actually had the chance to speak at the banquet, the Alumni Distinguished Scholarship banquet, and it was a real treat to be able to be there and experience it and not have to dread that exam, to speak from another side. [laughs]

Charnley: With the short time that we have in this interview, I'd certainly like to develop some of the main points at another date, and I hope we can sometime. I do have to interview more of the Rhodes Scholars, Molly Brennan and others, Paul Hunt, for that matter.

In looking back at your experience here at Michigan State, is there anything that just stands out as most important?

Leland: Yes. I think it would be the relationships with the adults, with the faculty and the advisors. I certainly have some lifelong friendships. In fact, my roommate, John Cobb, who was also an Alumni Distinguished Scholar is here today, and I really enjoyed catching up with him, and I'll nominate him as somebody you might want to interview as well. He'll give you some very—

Charnley: I'm interviewing his brother.

Leland: I think dedication of the faculty and advising staff here to creating an environment that was so supportive and rich was really what made my time here special, and I hope that tradition is alive and well today.

Charnley: I think it is. I want to thank you on behalf of the project for your time and also for your insight.

Leland: Thank you.

Charnley: Thank you.

[End of interview]

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