



Interview with Lance Collins

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Edited transcript

About Lance Collins:

Lance R. Collins is the Joseph Silbert Dean of Engineering at Cornell University. He joined Cornell in 2002, following eleven years on the chemical engineering faculty of Pennsylvania State University, where he held a joint appointment in the Mechanical and Nuclear Engineering Department. In 2011, Collins was part of the Cornell leadership team that successfully bid to partner with New York City to build a new campus on Roosevelt Island, focused on innovation and commercialization in the tech sector. Collins' research interests are on the application of direct numerical simulation to a broad range of turbulent processes. He earned his BSE degree at Princeton University, and his MS and PhD at the University of Pennsylvania, all in chemical engineering.

The following interview was conducted by Gordon Ellis, AICHE Communications. Video extracts from this interview are available in the Minority Affairs Committee's archives.

GE — We're interviewing Dr. Lance Collins, who is a professor and the dean of engineering at Cornell University. He'll be one of the honorees at the 2015 AICHE Annual Meeting, where the Minority Affairs Committee celebrates its 25th anniversary with the Pioneers of Diversity Awards. Thank you for joining us, Dr. Collins.

COLLINS — It's my pleasure.

GE — Tell us a little bit about what inspired you to pursue chemical engineering as a course of study, as a young person in the late 1970s and early 1980s.

COLLINS — I started college in 1977, and I truthfully didn't know any engineers when I was growing up, so I really didn't know much about engineering. My first exposure was something called minority introduction engineering. That was a program that provided me with a week spent at Lafayette College, and gave me some sense of what engineers do. It was a very rudimentary introduction to engineering. You did things with popsicle sticks, pretty basic, simple things. But it did pique my interest in engineering in some broad general sense. And I was always very good at math and science. And, because my understanding at that point in my life was that engineers make reasonable salaries, I thought, okay, I have the right attributes to be considered for engineering. So, I went in.

How did I choose chemical engineering? Well, that was almost happenstance. My freshman year at Princeton, I found that I really liked chemistry, and I thought, well, since you like chemistry and you want to be an engineer, what about chemical engineering? I had very little understanding

of what a chemical engineer did. In those days, there was a National Society of Black Engineers (NSBE) chapter at Princeton, and so I talked to people there and got kind of a glimpse of it. But, really, it was almost on faith — and the fact that I liked chemistry.

GE — So, you did your undergraduate studies in chemical engineering at Princeton. What was the climate like at Princeton for a minority engineer?

COLLINS — Without me even knowing, it turns out that the first African American chemical engineer graduated one year earlier. His name is Cato Laurencin — someone I knew really well. Someone I in fact admired and looked up to when I was going through, one year after. And there were three of us (minority engineers) in my class, and so we were essentially the second, third, and fourth African Americans to get a chemical engineering degree at Princeton.

Now, I didn't become aware of that until a long time after I left the university. But it tells you how much we were at the forefront of a major transition, especially at the Ivy League schools. They had really integrated in a significant way. I had two older brothers that went to Yale in the late 1960s, early 1970s — and they were the first wave. And so we were in some sense the second wave, although we were the first wave in Princeton engineering. So, there was a sense that universities were running an experiment. Can we diversify our population? Let's try. And so, they reached out, and they admitted a few students, and we were, to some extent, guinea pigs.

GE — And that was the early 1980s, and you did your doctorate at Univ. of Pennsylvania, is that correct?

COLLINS — That's right. I went straight on. I completed my undergraduate degree in 1981 and enrolled later that fall at the University of Pennsylvania.

GE — And when did you first make a connection with AIChE?

COLLINS — It goes back to my student years. At Princeton there was a student chapter of AIChE. And so I joined and participated a little as an undergraduate student. I wasn't terribly active at that point, but I did few activities. It was, in some sense, almost a more-social environment for us. What you find in engineering is that you spend an awful lot of time with your classmates. And so, this was a way of just having some free, fun time with that group.

GE — When did that involvement extend to — we call it the global-level? Did you become involved with local sections or programming of national meetings or any of the national committees?

COLLINS — Not really. When I became a grad student, I did a little more with the local section. I was then in Philadelphia at the University of Penn. And occasionally there were events that I attended. My former advisor, Stuart Churchill — who was an AIChE president in the 1960s — was very involved. And so, through him, I got a little bit of exposure to the local section. But I wasn't involved in a significant way. AIChE became a larger part of my life when I became an academic at Penn State in 1990.

GE — So, you were not involved with the Minority Affairs Committee before AIChE chartered it in 1990?

COLLINS — No, all of my involvement had been related to the more technical side of the house. When I started as a faculty member in 1990, there were very few other minority faculty out there. And so, I gravitated to MAC, in some sense, as a means of meeting the others and sort of

becoming part of that community. And Henry Brown played a key role. He was someone who I knew very well, and he really admired my former advisor Stuart Churchill. So, through Stuart, I met Henry, and then Henry quickly brought me into the MAC activities. And I joined MAC and participated, but primarily just as a member and not in a leadership capacity. I never chaired the committee.

GE — Do you recall any of the activities that the committee was working on when you were involved?

COLLINS — So, the primary MAC meetings were always at the Annual Meeting. And one of the interesting things — and it's not true of most of the other disciplines — is, AIChE is unusual in that it has an Annual Meeting that virtually every chemical engineering professor in the country attends. And so, it's a sort of annual gathering point — which is very powerful. Other disciplines are much more fractured, so subdisciplines will gather in one location, and other subdisciplines in another location, and it's very rare for them to collectively be together. AIChE, I think, has a great strength in that it has that Annual Meeting for everybody.

So, it was at those Annual Meetings that I became really involved with MAC. And so, MAC would have an annual meeting, and we would talk about its activities. A lot of it was focused on outreach to local schools. We would schedule a visit — and some of us would participate in that visit — with a local high school. MAC put that on every year, and it was one of its big things. And then, the other obvious activity was the scholarships that it was giving to both high school students who were entering into college, and to college students. So, I did some work on that — at one point reviewing scholarship applications.

But, you know, I eventually saw a need. There was this very small group of rising academic that were kicking their careers off at roughly the same time I was — Gilda Barabino, Christine Grant, Levi Thompson, Luke Achenie. There was just a group of us, and we were all starting our careers and going through the tenure process together at the same time. And that to me was a signal that this was a time for this group of people to begin to organize.

So, in 1995, Gilda Barabino and I started what we called the Minority Faculty Forum. We felt that, in order to create an environment in which faculty were going to be drawn in into academia, we needed a support structure that would do two things. The first would be to support those that had started an academic career — that would make them successful with tenure, with ultimate promotions, and even for them to think about administrative careers, now that some of us are old and wise (or foolish) enough to take an administrative position; to be in a position to begin to serve as mentors to those who are beginning to think about those directions in their careers. And second — and equally important — was to encourage graduate students, those that might have started in an industrial career but that were interested in academia, to bring them into the fold. And to groom them.

Academia is a very specialized career path. You really do need the skills to understand how to navigate a fairly complex set of conditions that one has in an academic setting. Namely, you've got to get tenure, you've got to understand how to manage complex relationships with people who are both colleagues as well as people who will be judging you in six years. How do you manage conflict when it comes up, and how do you get help from them, as needed, without signaling that you're in trouble — all these subtleties about succeeding in an academic career.

So, our thinking was — the Minority Faculty Forum was a place in which we would provide the kind of nurturing and mentoring that goes on broadly for any person that's considering an

academic career, but we would focus on those that are less well represented. And perhaps, through history, had been somewhat neglected in that process.

GE — Coming more to the present, have you seen changes in the climate, in terms of inclusion of engineers from underrepresented groups?

COLLINS — Well, I think there's really fantastic news, and then there's some reasons for concern. The really good news is, if you look at the numbers nationally, there's been a slow — it's sometimes frustrating slow — but steady rise in the representation of minorities in universities over the last 30 or so years. Kind of a slow creep upward, which is really positive. The disconcerting thing is that some of the numbers have gone flat, and in particular, the number that I'm concerned about is the number of bachelors degrees. Because, obviously, you've got to have a pipeline, right? And if there's a break or a change in the flow in one section, and that section is a requirement to get to the next section, it's ultimately going to begin to impact the higher sections as well. So this is a concern.

Why is that happening? I don't have a good answer. It's also true of women in engineering as well. There's been a flattening of that long, slow rise that was going on — and I don't know what that signals.

As a modeler, as an engineer, it makes me wonder about different segments of the population. We might have been slowly drawing into the pipeline the people who are used to being “the maverick” — the first to do things, the one that are going to break through. The ones that will never be deterred from their goals. But at some point, in order for things to settle into a more natural state, you've got to be attractive to the broad population and not just a very small segment of that population. And I kind of worry that what we've done over the last 30 years is essentially address the issues related to that group — that maverick group — that's willing to walk through fire, but we haven't yet created an inclusive enough environment for the broader population, as there is an inclusive environment for the broader population of the white population.

So, I think there's reason to celebrate and be proud of the achievements that have been made. I don't want to dismiss that, because I think that one can focus on the negative and not realize that it's time to celebrate the positives — and I think there are fantastic strides that have been made. That said, when you put that aside, you realize there's still work to be done.

GE — As we wrap up, would you like to make any final comments about MAC's history or about your fellow Pioneers of Diversity honorees as a group?

COLLINS — I am really thrilled to have been selected. I feel very honored by this. And surprised. I do appreciate that MACs work seems to have had some value. I'm working really hard on the Minority Faculty Forum, even as we speak, and I began some strategic planning process this year to make it even stronger and better than it has been. I'll be reporting that at our MAC meeting this year.

And despite that fact that there are lots of reasons to be concerned, mostly I'm incredibly optimistic for the future. So, I look forward to meeting with everyone and sharing stories and talking about the past, and, more importantly, thinking about the future.

GE — That's a perfect note to end on. Dr. Collins, thank you very much.

COLLINS — My pleasure. ###