

Dr. Kenneth Olden

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This is an interview with Dr. Kenneth Olden, Director of the National Institute of Environmental Health Sciences. The interview is being conducted by Dr. Victoria Harden and Dr. Sara Shostak of the Office of NIH History.

Victoria Harden: Dr. Olden, thank you for speaking with us today. Let us begin at the beginning. You were born in July 1938 in Parrottsville, Tennessee, and I'm looking for background information -- your family, your early education. And, of course, at that time Tennessee was still segregated, and I would like for you to give us some information about growing up in the South as an African American and how you ended up in science.

Kenneth Olden: Well, my mom and dad were moderately educated. My mom finished third year of high school, and my dad finished the eighth grade, and that was that was pretty good for an African American in rural Tennessee in those days. So, but my mother was very concerned. There were five of us -- are still five of us -- and my mother was very concerned that we get a high school education. I mean, they didn't dream of college, but she was concerned that all five of us complete high school.

Harden: Let me interrupt for a moment and ask you to state your parents' full names while we're here.

Olden: My mom is Augusta Christmas Olden, and my dad is Matt Leonard Olden, I grew up on a farm, and we owned a farm, a small farm, and my dad farmed it. But also, he was the chief of the sharecroppers because our farm wasn't big enough to sustain the family, so there was a Caucasian person who

owned a large farm, and it was a woman -- the husband had died in the year before, and she contracted with my dad to run her farm, and so he did that, and he had other workers as well. And he would get a share, sharecropping. He would get a share of the proceeds. So that's how we supported ourselves. And that happened, continued until, oh, I guess I was in college or thereabouts. My dad got a job in the government, working in the post office, and that was as the janitor. They used to clean up the post office, that was a good job for African Americans, and he had tenure, he had a good salary. They did allow him to meet, because the mail still was delivered by train to local small areas, not by plane, and so he would meet the train every morning and every night and get the mail. He would get it off, and then he put it back on the train. So he had to get up early to meet the morning train, and he had to work late, like eight o'clock or so, to meet the evening train, and in between times he would do the janitorial work around the post office. So now he had a good job.

But before that, the family lived by farming, and so, and we had a good life. I mean, it was, we were impoverished, although we didn't know it, and there were no social programs, particularly in Tennessee. I guess there were in New York, Chicago, and other places, but in rural Tennessee, there were none -- you were on your own. And even if there were a social program, my folks were very proud and my dad thought we had a good life, and we wouldn't have been on welfare or anything like that anyway. We never were.

So, but they made, I guess, you know, my folks made a very courageous decision early that I think is responsible for what happened, where I ended up. My parents made a decision, when they were about to integrate schools, that we were going to go to school, and we lived . . . We had to walk, my brother and I, and my brother before me. He's one year -- we're all, like when one was a freshman in high school, the other was a

sophomore, junior, and senior.

Harden: So, stair steps.

Olden: Stair steps.

Harden: And they're all boys or . . .

Olden: No. Five girls and, I'm sorry, three girls and two boys.

Harden: Three girls and two boys.

Olden: So my brother and I, at six and seven, used to walk about six miles in one direction nine months out of the year to go to school.

Harden: Wow.

Olden: Now, that was, and I say to people, that was a courageous decision because most African American families made the decision not to send their kids to school because of that. Now, the school bus stopped within 50 feet of our house, but we couldn't ride it, and so the only way we could go to school was that, you know, you'd send a six-year-old and a seven-year-old out across these fields nine months out of the year -- remember, some of those months were very cold.

Harden: Oh, yes.

Olden: And so, but we did that, and I had perfect attendance records.

Harden: And were the Tennessee schools integrated at this point?

Olden: No, no, no, they were not. There were schools closer to us, but we couldn't go. But, more importantly, the school bus picked up the white kids right within 50 feet, and we couldn't ride, most kids didn't go to school, so they grew up illiterate. But my parents made the decision we were going to

school, in spite of that. And also, farmers often needed their kids to work on the farm, and that was another reason that you didn't go to school. But they agreed on that. So my dad sacrificed our labor, except the two or three months in the summer, and we went to school, and eventually all four of us would walk to school, my two sisters, and the youngest sister was much younger, so she never did that. That wasn't the life she had. But the four of us are close together. So we walked this distance to a one-room school that had all the black kids, and one teacher taught all eight grades. And that school, the building still exists, but obviously they don't use it anymore. So we did that until, I guess I must have been in sixth or seventh grade, and then we moved.

We bought a farm. We were totally sharecroppers early on. And then my dad bought a farm in partnership with his brother-in-law, who had married his sister, and so we had our first home then, and it was near, they bought it near the school, and so I was then very near. Ten minutes, fifteen minutes, I could walk to school. So we did. And then we got to high school. Again, there was no high school for black kids in my little town, Parrottsville. The nearest high school was seven miles away, but by then they did provide a bus to pick black kids up. Still, schools were segregated, but we went to Tanner high school, which was in Newport, Tennessee, and so we had to go there and back every day. But that worked. When I was in high school, though, I had a principal named Rakestraw, R-a-k-e S-t-r-a-w, and he was from Knoxville, Tennessee, which is a more urban area, and he had a reasonable education, had a master's degree or two, and he really cared about his job. And he used to say to us, because most of us were, even the people who lived in Newport were more, it's still a small town, and while they thought they were better off because they weren't farmers, the one job, the lowest job in any community, African American community, is farming. So if you were a farmer, you made your living with your hands

and you weren't . . . So we were the, even in the black community, we were not highly respected or regarded. Our parents weren't.

We went to Peck [sp.] high school. The principal wasn't like that. It didn't matter to him. If you had a brain, he encouraged you to use it. And he used to say to us -- and he had a word; he always started saying, "By golly." And he would walk around and hit the table or the board. He'd say, "By golly, you guys can be anything you want," and he said it so often that I actually believed it. And others didn't pay, but, you know, "He's just a lunatic and we can't be anything," and so they kind of lived to prove everybody to live up to the expectation, and I kind of planned my life to disappoint people, say, "I am going to be somebody, and no matter what you think, I'm going to go to college, I'm going to get educated, and I'm going to make a difference." And so he appreciated that. I made good grades, I made the honor roll, and I did the best that I could do in that school. And so, when I got ready to go to college, he knew I didn't have any money to do that, so he arranged through Knoxville, first of all, for me to go and take the entrance exams, and I wouldn't have known how to do that, and for me to get a scholarship, a money scholarship, both absolute scholarship, then work aid so I could work. And then he arranged through the college that I could go away with other kids in the summer and work and make some real money.

So I used to come to New Jersey, and I came up at seventeen. I was seventeen years old, and I joined in with some other college kids from Knoxville, and we came up to Wildwood, New Jersey, to work in the resort industry for the summer. And so I made lots of money by my standards, you know, and I saved every penny that I made, and I had, you know, I was making I don't know what per hour, but a hundred or so dollars a week or, so it was big money, and I could actually pay my college tuition.

But even before that, when I got in high school, because I had to be bussed in anyway. I got a job in a barber shop downtown, a white barber shop, and my job was to clean up, you know, sweep up every night and clean up after school. But before that, I was allowed to shine shoes, and you could make some money. And so I would make -- a shoeshine was fifteen cents per pair, but on the weekend you could make \$15 or \$20 because you'd get tips and so forth. And I saved it all. My first year of college I did have it saved, so I'd saved, had a savings account and I'd saved my first year of college from shining shoes, plus when I went to work and I saved all that, so I got through. So I was able -- my parents didn't have money to give any of us. Now, my sister -- my brother didn't go to college; he got married out of high school. My sister, the one next to me, did go. But, again, she finally dropped out because there was just no money, and a girl could not make enough money. And she went away to work and she did, but she just couldn't make enough, so there was no way. So she stayed a couple of years, three maybe, and she dropped out. But she's done well; she's done fine. And so in college, again, I met people -- and that's been the story of my life all along -- who were willing to help. My high school teacher was a black person, obviously, because schools were not integrated, so I couldn't go to the University of Tennessee, and that didn't happen until 1961. And so I didn't go, just could not. But at Knoxville College, there were -- it was a missionary, it was a Presbyterian school, and there were a lot of, it was black and white faculty, and I would say it was the white faculty that took an interest in me mostly, although a biology professor did. But the person that really had the biggest influence on my life in college was a chemistry professor, and he taught organic chemistry. Well, he taught organic and general.

Harden: Do you remember his name?

Olden: Yes. Merten, M - e - r - t - e - n. He was a German fellow. And he was

good, he knew his subject matter, but he wanted to -- he taught us things above and beyond. So he would have sessions in his home -- he lived on campus -- to get us interested in learning, just to love learning, reading books and exposing us to things that most of us had never been exposed to. I remember Shakespeare and art and all these things I'd just never heard of before, but I was interested. And so I started reading Albert Schweitzer and Norman Vincent Peale, and just a lot of very thoughtful writers. And he would give us -- and he'd have a book club, and we'd read and we'd discuss. So it was that experience that enlarged my life, and, again, that, hey, you can be anything you want, and really you can be. So he then -- and I was a good student again in college. I worked, but I didn't do anything but work. I could count all my dates on two fingers, two hands, and I'd probably have some left. But I worked. I just was not going to be kicked out. I was going to make it. And I did. But it was a huge, a real ordeal for me. And so I say to people now, I don't want anybody to have to work as hard as I worked to make it.

Harden: I don't follow you there completely. You're obviously a very bright young man. Why was it so hard?

Olden: But when you start so far behind . . .

Harden: Yes.

Olden: When I went, I was a good student in high school, and I took advantage of every opportunity. When I showed up at Knoxville College, now, this is not the University of Tennessee or the University of Michigan or Chicago or Harvard. When I showed up at Knoxville, I had to take remedial English and remedial math in order to catch up with the black kids.

Harden: I see.

Olden: Right. And my graduating class from high school was eleven. It was just a little, small town, and we didn't have good education. So we were just, you know.

Harden: So you came even farther than the others.

Olden: Right, right. So when I got to college, then, I had to work like hell to keep up, even with the black kids. And so, but that was good for me because it gave me an opportunity to, if not catch up -- I'm not sure you ever catch up. I just said that to my wife. We just had this discussion. But it gave me an opportunity to fill in some of the gaps and recognize some of my deficiencies and work on them, and so I did. But, so then when I, my last year in college, this same fellow, chemistry professor, Dr. Merten, knew of a program at the University of Tennessee that they were -- off the record, it was the Experimental Integration Program, and so they never had black students on campus as undergraduates. Now, the University of Tennessee integrated the graduate program in 1954, when the Supreme Court decision was handed down, but they did not integrate the undergraduate program, and I don't know, but I suspect it had to do with graduate students could care less about the social life, they've got their own social life, whereas undergraduates, you know, they mix in, and I'm sure it was the social issues. So Dr. Merten got together with a white, another professor at the University of Tennessee named Dr. Arthur Jones, and they cooked up this scheme that we'll have these two black kids come over from Knoxville College, which was just across town, and they will participate in this research program. And by then, the government was -- and they had accepted a big grant from the U.S. government, and the government said, you know, discrimination and this and that, and so they said okay, you can't deny these two kids just because they're black, and the university decided not to challenge that. So we were allowed to participate in a research program in the biology department at the University of Tennessee. Now, we

couldn't go to . . .

Harden: At this point you're a senior as an undergrad.

Olden: I'm a senior as an undergrad. So I could go to seminar and I could go to my lab and do work, and when the university had seminar speakers, I could go. People got used to seeing blacks in the group and recognized that nothing happened, you know, whatever . . .

Harden: And you didn't have to endure any personal [unclear]?

Olden: Well, it turned out we didn't, you didn't know that at the outset. It was anticipated that that would happen. My parents didn't want me to participate in the program for fear of that, and there were reprisals also against your family. And so we were worried, and I was concerned, but we did it. Nothing happened. You were ignored, but that was the least of your worries.

Harden: Right.

Olden: Right. So we went, and it worked. And then, the next year, though, they absolutely integrated the undergraduate school with a hundred-and-some students. And actually, I was just a candidate for the president of the university-wide system, which search ended about two to three weeks ago, and it had a lot of history connected to it. And I didn't get it, but I was one of five finalists for the position. And all that history was resurfaced.

Harden: I was going to say that.

Olden: And when I went down for my second interview and I met a black fellow, who works now in the president's office, and he is the vice president for minority affairs, he was among the first class that went in in 1961, and he did not know. And I said, "Well, maybe we've laid the groundwork for

your being here,” I said. He remembered there were two students. I said, “Well, I’m one of those students who went to the University of Tennessee in” -- that was 1960, and they went in in ‘61. So it changed. So Merten was very important in my life, and so I told the story to the search committee. As a matter of fact, I wasn’t looking. I don’t want another real job. I want to stay at NIH. But when the University of Tennessee called me, and a lot of people had called and written, I said, “No, I don’t want a job,” and that’s when they called. I said, “No. I appreciate it, but I’m not -- I want to do different things. But,” I said, they said, “Oh, please think about it because you’re Tennessee and in this, and that would be . . .” and I said, “Well, I will. I’ll think about it.”

So, for all, a lot of historical reasons, I said yes, and once you’re in it -- and I regret it but I said yes -- but once you’re in it, you have to compete. And this one especially I had to compete because it was an open search, really open. It was televised, Webcast. Other universities were interested in it as a model. So people were looking at it all over the U.S., people here in the NIH, people in my institute, my own office. You can look at it. When I interviewed, there was a search committee. A table, a long table, but there was an audience, like being on the Johnny Carson show. And community people were there. And actually, I walked in for my first interview and looked to my left, and two women -- one was in my class and the other one was in the class ahead of me -- came to support. They were just -- I had phone calls from the mayor of my city. The support from all--I was the favorite. Let me just say that was clear. In Tennessee, I was the head, hands-down favorite of black and white. I mean, they just bought this. And they ran profiles on all of us, so they ran my profile, and blacks and whites basically rallied around me, said, “This is the person we should get.” And I said, “Well, I can’t let people down.” I really worked hard and made sure that I really did handle the questions well, because I was the only

candidate that had never run a university. Everybody else was a former president or chancellor or senior vice president at a major university, and I had never done that. So I had to really make sure that I talked to the right people, read the right books, and thought the issues through, and I had. So I did a good job. I gave a good account of myself personally and my race and my community, and all of those were important to me because all of those people were pulling and I was the underdog in a sense. But it was the issue of, here's a kid, and there have been articles written, editorials written after the decision was made, and they sent me a copy of it, and this, a person wrote in a letter. I don't know black, white, what color, who they were, wrote an editorial and said, "This was our chance to correct a mistake we made before, and this time we didn't have to do anything special." They said, "This guy, he happens to be black, but that wasn't the issue. He was qualified and he did the best job in terms of responding to the issues, and would have made the best leader." And so there were people who wanted the university to make a statement about the future and not about the past. But you understand that my age was a factor, a valid factor. But I think it will happen with the next round.

Harden: Well, what I'm immediately thinking about are all the young black students who were looking at you and what you might say to them and what they might say to you, what they take for granted.

Olden: Right. Well, I think they also saw it as a statement, too, and I saw it that way, too, because I was born in absolute poverty. I mean, black and white all live here, and all of us -- but one thing we had in common was we were all poor. And so I think it would have been a statement to any kid, black or white, and that's the way people were looking at it, is that you can do it, because here is some kid who grew up in the same circumstances as you did, and he is now -- and he couldn't go to the University of Tennessee -- but now he is a candidate and is qualified to be president of the University

of Tennessee. So it was a powerful statement. But it didn't happen, and so I'm just as happy. I'm not unhappy.

Harden: Well, we are, of course, glad that you got to stay at NIH, for the moment anyway.

Olden: I'm going to do what I said I was going to do.

Sara Shostak: As you went through your graduate work, it seems like you were focused on genetics, cell biology, and biochemistry. Would you describe first the decision to go to the University of Michigan for your master's degree?

Olden: Yeah. Well, Tennessee, the experience in Tennessee changed my whole career, and that I said to them too, and that was the reason. When I was at Knoxville College, I was going into medicine. I was going to be a physician. And when I first went to the University of Tennessee, that's what I was aiming to do, apply and go to medical school. But I never had an opportunity to do research and see research up close, because Knoxville College was a teaching institution and nobody was doing research. When I got to the University of Tennessee, I realized that I enjoyed research, because that's what I had to do, and I learned that, hey, this is really enjoyable, and this fits my personality better. And also, the other piece of it was, when scientists were invited to give seminars at the university -- they had an excellent seminar series -- it occurred to me that I already knew more black physicians, and that was one. In my little hometown, unbelievable for this region, there was a black physician, one, and that was a role model for all of us. You know, we call it being a preacher. You'll be a schoolteacher or you'll be a -- the other role model was the physician, and there was one. In most communities, there would not be a black physician, but I was fortunate enough that there was one in mine. So I wanted to be a physician, and that's what I was going to do, but I realized that, well, I realized that I could make a . . . I learned, I started out very early, and it's

weird, that when I was in high school, I wanted to make a difference, and I wanted to make a difference for people like me, not just in terms of color, but people who were outcasts, not included, not, whose families didn't matter. And I recognized that some of us, one of us, we have to get through to be a spokesperson for this group of people. And I said, well, when I saw that there were no blacks in science, and it seemed to be a discipline, and I think it is that, that you got your promotion, upward mobility, is based on what you know, your brain, and not on anything else. Now, that's not absolutely true. I mean, there is discrimination against women, or there was, and maybe still is, and there are issues about race then and certainly maybe even yet, today. But mostly, if you can get around any other issue, I think, if you work hard, publish good papers, do good science. And so I said, hey, that's what I'm going to do. I can make a very important statement by just becoming a nationally competitive scientist, no matter, you know. So I decided I was going to do that. And making that decision was very important because, unlike too many other African Americans, I would say, I didn't become seduced by the first job that was offered to me, and once you get a certain level, and especially when I went to Harvard in the '70s, well, I was getting offers from everywhere, and they were just talking about . . . But they were, you know, jumping over faculty positions. They were offering me assistant deans and, or dean of things, and here I was going to go in right out of Harvard, making all this money and have this title. But I said I'm not much of a scientist, why would I want to be a dean or assistant dean? All the white deans I know, and assistant deans, they went up through the ranks. In other words, they were assistant, associate, full professor. They were nationally recognized and respected, and then they became deans. So I would suspect that those guys will go up and become president, vice presidents, and have a full, enjoyable, productive career, and that's what I want for myself. So I didn't want to short-circuit my career by accepting a job that I, because I

was black, basically, because they weren't offering those jobs to white folks. They were just to blacks. So I didn't take them. So I stayed at Harvard. With Harvard, I was myself in the lab. And then -- I will get to that question -- I had three children at that point, and my wife and I didn't have....

Harden: We need to back up. When did you get married? Can we get that story, too?

Olden: Oh, yes, yes. When did I get married? Well, I'm presently married a second time. My first wife and I got married when I was a graduate student at Temple University, and we got married in 1966. And she and I had three children.

Harden: And what was her name?

Olden: Her name is Eileen Tindley, T-i-n-d-l-e-y. And she was from a prominent family. Her dad, her grandfather, rather, was a . . . As a matter of fact, there's a big church, a major Methodist church in Philadelphia -- she's from Philadelphia -- that's named after her family. And so he was a songwriter and he wrote a lot of hymns, and there's a hymnal that he wrote. And so it's a very prominent leading black family in Philadelphia. So she and I got married, and at the time, that was in the '70s. We got married in the '60s, but by then we were at Harvard, the '70s.

Harden: You had three children. Let's just get their names for the record.

Olden: Yes. The oldest is a daughter, and her name is Rosalind, R-o-s-a-l-i-n-d. And I have twin boys, and one is named Kenneth Foster -- I don't have a middle name, so, but his name is Kenneth Foster; and the other one's name is Steven Tindley. And Foster is my great-grandmother's maiden name, and Tindley is from my wife, so we incorporated those as middle names.

And, you know, we were going to Sears and Penney's and with the charge card to keep shoes and clothes on their feet, because Harvard doesn't pay very much. And even though I had a Macy's faculty fellowship -- I first had a fellowship for three years, postdoc. They paid for my postdoctoral training. But then, Macy came and offered me a Macy faculty fellowship, so the university had to give you faculty appointments, which Harvard did. But the salary scale in those days for Macy's went up to \$36,000, but Harvard would only let me make \$18,600, because other people that were higher in rank. And so, but I took it because it was more than my postdoc, so I did that. But at some point I recognized that, hey, I can't keep doing this even though I'm enjoying it and my science is good.

So Ira Pastan, who is head of the Laboratory of Molecular Biology in NCI, had been courted for chairmanship in physiology. I was a postdoc in the Physiology Department. I worked between Physiology and Biochemistry Department at Harvard. Ira Pastan had been recorded to become chairman of the Physiology Department, but he decided he didn't want it and he stayed here. So I knew he was highly respected. He ran the laboratory every bit as good as with prestige as the one I was in at Harvard, and he obviously had Harvard credentials and he was working in an area that would give me, allow me to change directions.

Harden: And why did you want to change directions?

Olden: Well, my research early in my career was on microbial systems. I worked on *e. coli*.

Harden: And that was when you were in graduate school?

Olden: Yes.

Harden: We skipped over that pretty fast. You may want to elaborate a little more.

Olden: Right, right, right. And I realized by the time I'm in postdoc, in the '70s, you could see the shift. In other words, those microbial systems weren't going to be a high priority for NIH funding anymore. That was the time people began to culture animal cells and animal tissues and so Ira Pastan had started a new group that was beginning . . . He was also a microbial person in the olden days. He was shifting from microbial to animals, and so I wanted to come and join that group, as he was putting together a new group. And so I came in as a senior staff fellow, and he brought in several other people the same year he brought me in, in similar capacities.

Harden: Who all was there? Talk to me a little bit about . . .

Olden: Well, Ken Yamada, who's here now. Ken Yamada is chief of one of the laboratories in the Dental Institute. Who else is still around here?

Harden: Harold Burroughs [??] had come and gone, I think.

Olden: Yes. I didn't overlap with Harold.

Harden: Right.

Olden: Bob Perlman. It was a big group. Perlman was there at the time.

Harden: Susan Gottesman?

Olden: Susan Gottesman, Michael Gottesman. It was a big group. Everybody went off. And many of them are still here. Everybody went off and basically did really well.

Harden: Why do you think that? What was special about that lab?

Olden: Well, I learned to do research for Harvard and NIH, and both of them taught us -- and I tell other people, only work on important problems.

Harden: How do you know what's important?

Olden: Well, some people do and some don't, and I think I'm gifted at that.

Harden: So it's an intuition.

Olden: Right, yes. That's what I would say it is. And I think about vision, and I think vision is the capacity to anticipate the future, in other words, to see around corners. And how do you do that? I don't know, but I think I'm pretty good at that. I mean, the conference today, we kind of got it started three or four years ago, but I think this will be, when we look back on this conference we had today, will be viewed as a landmark for change and getting us thinking about all those. There's a lot of work to be done. But I think just somebody needs to stand up and take leadership and be identified with and bring the key players together. And we didn't get them all there, but we got Tommy Thompson there. And I wasn't there for his talk. I understand he really gave a good talk, and it was apparent that he had given a lot of thought. And he may be motivated now to do what I can do, is to provide the national leadership, bring other secretaries together and bring it up to President Bush. So I learned that from Ira, I would think, more than even Harvard. And Ira would say, "Ken, you can put in 14, 15 hours a week" -- and we were; I mean not a week, a day -- "working on an unimportant problem, that even when you solve it, nobody gives a damn about. Or you can work on an important problem that every day". But the issue is, you take a chance if you work on the forefront, because other people, its forefront because nobody else is doing it. And you don't have, you can't lean on anybody, you know, somebody else's data, oh, yeah, you compare your data with theirs, and, you know, you feel good. Yeah, I'm right. So you have to publish and put your stuff out there, and everybody's going to be shooting at it, or trying to repeat it, and so you have to be sure it's right and your interpretations, your models and everything that you're building. So you're the leader, not -- you're not following and supporting

somebody else's model. You put the models out there. And you're going to be not always 100 percent right, and that's a gamble you have to take, but you have to trust your ability. And so we did. We always worked on -- I remember the first paper, that *real* paper that I really liked, he and I put out together, and that became one of the [unclear] was in *Cell*. *Cell*. That is still the best journal. It's published by MIT. It was new then, and they only solicited papers from people like Ira Pastan, so I couldn't have gotten in there except I co-authored with Ira Pastan. Well, Ira and I and, I guess, Ken Yamada, we did a paper on -- it was a very simple question but a very important one, because the question was very simple. It is why are carbohydrate groups, carbohydrate groups attached to proteins? Well, George Palade, who was then professor at Yale, had won the Nobel Prize a few years earlier than that, and in his Nobel Prize lecture, he postulated that carbohydrate groups are put onto proteins so that you can get them out of the cell, because most things, most proteins are excreted, have carbohydrate groups on them. Well, it became dogma. It was just a hypothesis now, but over the years it became dogma. You know, you forgot that it was a hypothesis. It's been presented as if this was a requirement. And I looked at that and said, "You know, I'm not" -- there's one major protein is called albumen. That's a major protein in your blood. It's huge. A huge percentage of proteins in your blood are albumen. And you can follow albumen from the time it's made and then all the way through the life cycle and it never has carbohydrate groups on it. And you ask, how . . . Maybe that is -- you could say, well, that's the exception. But I said what if it's the rule? Right? So I, so we had been working on and I had an inhibitor. I had been working on an inhibitor. We had an inhibitor that would allow the cell to make a protein, but it would prevent -- it blocked the enzymes that added the carbohydrates, and it didn't do anything else. It was very clean. And you could make a protein without carbohydrate groups on it. And so what we did is asked that question: If we make, allow the cell to

make all these proteins without carbohydrate groups on them, what is the fate of those proteins that are normally exported? Well, it turns out that the fate was they could get exported, but it wasn't a simple thing to figure out because it turns out that you do need the carbohydrate groups on them to stabilize them against then degrading. In other words, the cell looks at them as abnormal proteins, and the proteases just chew them up. But you have to be careful that you know that it's that and it's not secretions. And you can do that by inhibiting the proteases. And it took a long time to do it. But in the meantime, some very prominent people in the field published a paper in *Proceedings of the National Academy of Science* with just the opposite conclusion than we did. Now, ours went out. We submitted it, but we knew then, they won't accept it. So let's just go back to the lab. And we demonstrated unequivocally that the other paper, the other guy's group was wrong. So Ira said, "Go home and write the paper, Ken, and I'll see you in two weeks, but I want the paper." Well, two weeks, I came back and I had the paper. But I had kind of selected a mealy-mouthed title. I don't know. And Ira said, "Nice paper. Do you believe it?" I said, "Yes, of course I believe it." He said, "Well, why in the hell do we have this title, that maybe carbohydrate groups or something." And so I think we said carbohydrate-group moieties are not required. He said, "You got it." He said, "We're going to get everybody's attention on this paper." Well, we did. We published it, and we got everybody's attention. Before the paper came out, had been accepted, I was invited -- we submitted an abstract to *Cell Biology*. Palade was there. Palade was the Nobel Prize winner. He was in the audience. Standing room only and I was the person to make this oral presentation. And Ira said, he listened to me, he says, "You've got it." He said, "Just stick with your guns, and they'll challenge you. Stick with it." So we did. That made, that's how I got discovered. I became visible with that paper.

Harden: With that paper.

Olden: Right.

Harden: That's very interesting. I want to ask one more question about the NIH in general, and then want to come back to some more of the research, and that is, did NIH pay better than Harvard?

Olden: Yes.

Harden: A lot better?

Olden: A lot better, a lot better. You know, it turns out that never in my career -- that's the other thing. I never take a job for money.

Harden: Right.

Olden: So when I applied here, I just recognized that I thought I would get more money. Nobody ever told me that, but I knew I was applying for a fellowship, a published salary, so I knew it was in that range. And Ira, it turns out, gave me the max that he could give me, and so I ended up about doubling my salary.

Harden: Which your family appreciated.

Olden: Which my family appreciated. Then, actually, my first wife, who moved here with me, then got, for the first time, a real good job with the county government, so our quality of life went way up. It was very good. So I was able to do what I wanted to, and she was able to get what she wanted to do. Yeah. It was the best decision I ever made. Now, when I was being courted here, I had also been offered -- and I looked, was tempted to the University of Michigan because I'd gone to the University of Michigan and I kind of, you know, the nostalgia, you want to go back. But I decided that that was the wrong job, this was the right job. And Michigan was going to

pay me even more. But that was not the right job. This was the right job for career upward mobility, so I took it. And I did. I stayed here, and Ira eventually came to me and said, "I'd like to put you up for tenure." A senior staff fellow is like assistant professor, and at NIH it's even worse because you're expected to go up. But he put, of that group, two of us, Ken Yamada and I, got tenure as did Michael Gottesman and Susan. But I think they came with tenure, I believe, or thereabouts. But anyway, they had been here before, and I knew them from Harvard. Then they came back. So it was a really good group, so, yes, you know, I just . . . Harvard still wasn't very good.

Shostak: Let me move us back in time just for a moment and ask you to reflect a bit on your time at the University of Michigan and then at Temple.

Olden: Right.

Shostak: If you could expand on the research you were doing and who you were working with at that time.

Olden: Yes. The University of Michigan, weird, did not require research for a master's degree. I worked on genetics, but it was not -- and you had to submit a paper and all, but I did not, you didn't have to do research as a requirement for a master's degree. You had to do two years of coursework. And they made you do most of that in some concentrated area, which in my case was genetics, but you also had to do two or three courses outside of your main area, so I did anthropology and entomology. And so when these cicadas make all that noise, I understand that because the person who taught me entomology was an expert, actually, from the National Academy of Sciences on interpreting those chirps of the cicadas. So, I went to the University of Michigan thinking that I could -- from Tennessee, from where I started, getting a master's degree was a big deal, and I thought I could go out and do things with a master's degree, and I got

it and went to Columbia University, the Biochemistry Department at the medical school, to work, and got a job, and discovered pretty soon that I wasn't going to go anyplace with a master's degree. Now, I worked with a wonderful human being. His name was Duane Price, and Price was assistant professor, and he recognized that I had ability, and so he encouraged me not to stay on working for him as a technician forever, but to go back to graduate school. But by then, I'm in New York City, and I didn't want to go back to Michigan, not to Michigan. Michigan was too cold for me. I was from Tennessee and it was very cold. And also, there was a fellow at Temple University...in those days, I was interested in *drosophila* genetics, and the person I worked with at Michigan was a *drosophila* geneticist. He was a student of a fellow from Columbia named -- the big name in *drosophila* genetics was a fellow by the name of Dr. Janski, and there was a fellow at Temple University who was also a student of his and became professor at Temple. So rather than go back to Michigan, I came down to work with this guy Janski and other students. But after being at Temple for about a couple years, I decided that -- before I started my research, I was doing coursework -- that I really wanted to go in cell biology, and biochemistry was really the future, and I had, you know, opportunity to do that. And so I switched advisors. I came to work with a fellow by the name of Hillman, Bob Hillman, Robert Hillman. But I decided to work with another fellow who was a biochemist cell biologist. And he eventually left Temple to go to the University of Rochester and become associate professor, and I completed all my coursework at Temple, and my language requirements. In those days you had to be proficient in two languages. So I didn't want to go through that all over again, but Temple said that's fine, you can go with Kempling [??], his name was, and you can come back to defend your . . . So I became a student *in absentia*, a Temple student at Rochester, so I went to Rochester.

Shostak: Okay. I'm going to stop this for one second.

Harden: It is pushing four o'clock, and I have two questions.

Olden: Okay.

Harden: One, we want to finish up anything else before we switch you to Howard Medical School, anything that we've left out in the early part. And the second is, how long can you go today?

Olden: I think I have a four, so I don't think I can go long today, but I could do it another time.

Harden: Yes. Maybe we should -- this might be a good stopping point unless we could go through Howard before you . . .

Olden: Well, I probably have enough time for Howard.

Harden: Okay. We'll do Howard and then stop before we get to the NIEHS.

Olden: Yes, right.

Harden: Okay.

Harden: Is there any other thing that you can think of that we should . . .

Olden: No. I just wanted to say, my earlier career did not -- I'm still very friendly with Ira Pastan. When I was sworn in as director, he was there and his wife was there. I invited them. And from the podium, I said that I am behind this podium today because of people like Ira. He was one of them who -- and Al Rabson and Ruth Kirschstein, people who . . . And I would say particularly Al and Ira. They did things for me they didn't have to do for me. And I said, for people from my background, you can't get ahead otherwise. And so I -- Ira, I get together with him frequently for lunch. We had lunch about a month ago. I called him up and I said, "Let's go out

and have lunch,” and so we did, and we sat down and talked, and it’s really good to see him and get together. I really liked him as a human being when I worked with him. He kind of drives his people, but that was good for me. So he knows that I appreciate him. We are close.

Harden: You will be glad to know that he is beginning to work on the history of his lab.

Olden: Yes. Well, it’s interesting. He did have an interesting history.

Harden: Let’s talk about the move you made, then, to Howard University Medical School, because now you’re switching major fields here.

Olden: Right, right.

Harden: And tell me first, what enticed you to leave NIH?

Olden: Well, I always recognized that I wanted to make a difference, and I recognized, as when I was at Harvard, I still interacted with black colleges and universities and faculty and students. And I realized that the quality of education that they were still getting, and they’re still getting today, is far inferior. They’re not getting the kind of quality education so that their students can be competitive in the mainstream in science. And I always wanted to go back to an institution and set up a first-rate research program so kids could really see first-rate researchers, what first-rate research is, and we tried to do that. So when I was at Harvard, I lined up five or six scientists, at my level, who were at Harvard, MIT, or wherever, schools like that, black scientists, four or five of us, and we tried to market ourselves as a team. In other words, we tried to go to Meharry, Howard, and say, “Look, we want to come in, five of us, and start a new department,” and only one school would bite. That was Meharry. And we almost got a deal at Meharry. Now, DeWitt Stetten, who was over, he liked the idea too. And so we had

some -- we almost made it. But in the end, we couldn't, the deal fell through with Meharry. Now, we went down and looked. It was myself, Jim Townsel, J.K. Haynes. Jim Townsel was at Harvard with me. He's now at Meharry. And J.K. Haynes was at MIT. And Luther Williams had been all over the place, but he was also one of the leading young black scientists. It was the four of us. So we wanted to go and take, become a whole department, whole unit and we had NIH backing, but it never of happened.

So I came here, but I never got that out of my system because I thought it would be an important contribution because the scientists and instructors and faculty at black and white, at black institutions, you know, they have this excuse that you can't do first-rate research at Howard. They won't fund you, or all kinds of excuses. Well, I felt that was wrong. And so when I was a Macy's faculty fellow at Harvard, one of the persons that I met because they had a search committee just like, had a committee just like Robert Wood Johnson had. Robert Wood Johnson is patterned after the Macy.

Shostak: I didn't know that. That's interesting.

Olden: And so they had a committee that met with us every summer like the fellows, and the dean of Howard, named Marion Mann, was on that committee, so he knew me and he thought I was a great . . . So when I came here to NIH, I called him up, I would go down and see him, I stayed in touch with him. They had a cancer center there, and it was not competitive. Finally, I guess, they implied they were tired of supporting that institution just because it's black. He didn't say it that way, but that was clearly the message. And it wasn't competitive, and we weren't going to do it anymore. So they took the grant. So Marion Mann called me up and said, "Ken, I'd like to talk to you. And he finally said, "What do I need to get you to come

over and run the cancer center?" and I told him. And I had never, you know, I was happy at NIH. And I said, "Well, you know if I can decide who to hire and fire, I will come. If I can't do that, I'm not coming." Well, they wouldn't give me that authority the first time, first year, so they said no. So they took their chances, went before the peer-review committee, and definitely failed again, so they could reapply. So they reapplied and didn't get it. And this took about a year. So he comes back to me and says, "Okay, all right, fine. Let's talk about that again." And so we did, and I said, and so the same requirements, and, sure enough, they gave it to me this time. And at this point, I had a brand-new building. There was a brand-new building that had just been built by NIH. Nobody was moved in. It was just there. I said, "Fine. If I can decide every person who comes in this building, I make the decision," and he said, "You've got it." So I talked to Ira and all. He said, "Look, it's something you want to do," and Al, and agreed. "Go and do it. And you can take a leave of absence." I was tenured then. "And if it doesn't work, you can come back." And so I made a promise to myself that I was going to, if I couldn't do the administrative chores and keep my science as competitive as it was at the NIH, I was coming back, and I meant that. But I went over, and I was able to do just that. So that's why I went. I went to prove to myself and to the community-at-large . . . I mean, I used to [think] we couldn't do research at Howard, I think. I think everybody just accepted that. This is an environment where you aren't going to be able to be productive. Well, I went over and not only demonstrated that I could be productive, but that I could hire people who were also productive. So we went over. We got the grant restored and we kept it. But I was able to recruit people from all over. Some of them came back to the NIH and they're tenured here. So, some have been in top institutions who were at Howard with me. So I proved that you could do it. But let me just say, at some point, though, it was swimming upstream and I got tired, because I brought in a fellow, an Asian

fellow, I would say . . . Well, I brought in Steve Akiyama from NIH. Steve Akiyama is now -- got tenure under the Harold Varmus years at NIH. And, you know, Harold came in, upped the standards. Steve got tenure here. He came back from Howard when I did, went to the Dental, got tenure, and now he's in my institute, but he just transferred because I hired his wife to do something. We hired very first-rate people, and we were able -- we got grants, NIH grants, we, just like any other institution. So it got me a lot of visibility, too, because people said, "What's going on at Howard? Who is this guy? And how's he doing it?" And NIH, because we were funded by NIH, the institutes in the NIH, so they knew it. We put together a national advisory committee made up of prominent people, National Academy members, and they knew us. So when they were looking for somebody to head this, and so that's when I went to Howard. I got tired swimming upstream because I could not get people like Steve Akiyama tenure. I couldn't get him even on hard money. So I brought Steve Akiyama there on soft money; in other words, money that I got through the core grant and the core grant would allow me to keep him on there for three years, or he had to get his own money. And he did; he got his own money. But people have families, and they have a right to tenure or tenure track. That's all he was asking for. And I couldn't get him tenure track, but he wasn't the only one. There was another fellow that I hired from Yale, and he had been in the best labs and everybody, of the top two people in the field, this is one of them. But he was a Chinese -- he is a Chinese fellow, and his English wasn't very good, so he couldn't be in a classroom. And we knew him, so I got him to come to Howard. Well, the guy was there within a year or two. He had three grants, two NIH grants, one NSF grant. Now, that was hard to get. And so he -- now he's a full professor at Stony Brook.

Harden:

But Howard wouldn't tenure him.

Olden: Right, wouldn't even put him on tenure track. And so he took . . . I would get them in, they would establish themselves, and somebody else would hire them. It was just a revolving door.

Harden: Was this because of university politics more than anything else?

Olden: In part, but they never truly understood the importance of having first-rate scholars. Scholarship was not, no matter what they say, scholarship was not something that was important to them.

Harden: It's just an important thing.

Olden: Oh, it is. Oh, it is an important thing.

Harden: Is it still this way?

Olden: Still that way, still that way. My best friend is Jim Townsel, who was -- Jim was a postdoc at Harvard. He still does -- he is one of the best scientists, in my estimation, in a black institution today. He's productive, publishes good science. He's a neuroscientist. And Jim went to Meharry, and he met with the same success I met with, same problems. He got fed up and went to the University of Illinois-Chicago, and he was vice president or something, but still doing fine. And he eventually went back to Meharry because he was, like me, had this visionary . . . One time is enough for me, but he went back twice. And we just had dinner together last week, I guess, and he's retiring. Now, he's old enough to retire, but if he was in a good environment, he would not. He just is fed up. He can't take it anymore. But same thing, same issues.

Shostak: Do you have time to talk to us a bit about your research interests when you were at Howard and what was going on in your laboratory?

Olden: Yes. I could tell you along some of the same lines that I did here. I was

interested, developing interests, two interests. One is, we were always interested, from the day I came to NIH, that was Ira's interest, is we were interested in tumor biology, and I picked up the interest in metastasis -- nobody else was; I was -- interested in metastasis in the group. And Ken Yamada and I worked on a protein called fibronectin. We were interested in it -- we were not so aware when we started that it was involved in the spread of cancer. We knew it was, it turns out that cancer cells lose this protein from the cell surface, outer surface, when they become transformed, and this protein makes up about 50 percent of the cell protein, membrane protein. Now, that's huge, and this was an observation. So we had the naive notion that if we could somehow restore that protein to cells, we could cure cancer. In the test tube and in a culture dish, you could do that, almost. But what we noticed, though, we could cure everything except the growth rate in a culture dish. So that was why we were interested. We knew it was involved in metastasis. So when I went to Howard, I continued to work on that, but it was about that time that Ken Yamada, in another lab -- and I wasn't part of that -- identified the sequence in this huge protein, these five amino acids, and that is called the cell binding. That is how this protein binds to the cell surface. Well, I had the idea, Ken and I together, that if we could block metastasis, the spread of cancer, by injecting somehow either that protein, that little peptide, fine, and we did that. So we had a really nice paper in *Science* that we had cured metastasis. We could prevent metastasis. And we could do it; it worked. But it turns out that in a mouse model, you can keep pumping in enough peptide to do it. In a mouse model, you have two mls of blood, so you can -- it's not very costly to keep putting this peptide in. So it was a nice paper, really highly exciting, and exciting to science, the first. So we were the first to show that you could actually block metastases in some of these approaches. Well, we then partnered with the industry, got them to make, because the problem with this peptide, it's small, and it will be removed from your bloodstream

the first trip through your kidneys, and so you'll urinate it out. And so its half-life was eight minutes. Well, the pharmaceutical half-life is more like 48 to 72 hours, and so that's what it had to be. Otherwise, you can't afford it. We asked a pharmaceutical company to work with us to take this little peptide and put it in the middle of something that would have a long half-life. So we worked with some of those, and we could expand the half-life, but we could never get it to 11 or 12 hours. We could never get it to be effective and have a long half-life. While we were doing all that, though, we became less naive, and we realized that cells, particularly cancer cells, have developed multiple mechanisms to, if one doesn't work, they have a compensatory mechanism, and now we . . . So that's how I got to what I'm working on now. I'm still working on metastasis. But we figured out that we've got to identify some event in the cell that, no matter whether they, if they use -- there are a lot of proteins they can use for adhesion: laminin, fibronectin. Those are the major ones, but there are others. So we now are looking for a cell event that all of those adhesive proteins use, and so we've learned that there are signals. Those cells just signal; they send signals across the membrane. And now what we're looking at are those signals, and we're trying to find like a critical traffic light that will, that if we could, a critical intersection, if we could block that intersection, no matter what, how the signal got started, you could block metastasis, and I am optimistic that we'll find that. My lab has some really exciting data, and we are doing a really good job. So that's kind of the reason I want to go back to the lab.

Shostak: I bet.

Olden: Right.

Harden: We'll stop there today.

*END OF INTERVIEW*

