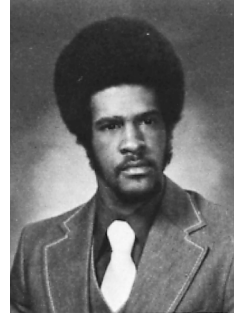


JAMES E. HUBBARD, JR.

b. 1951, attended Morgan State College, 1972-1974 (no degree); SB 1977, SM 1979, PhD 1982 (mechanical engineering) MIT; assistant professor of mechanical engineering, MIT, 1981-1985; lecturer, 1985-1994; chief, Adaptive Sensors Section, Draper Laboratory, 1985-1991; vice president for research, Optron Systems Inc., 1991-1992, executive vice president, 1992-1995; senior systems engineer, Center for Photonics Research, Boston University, 1995- ; appointed in 1990 to Committee on Assessment of Defense Space Technology, National Research Council, and in 1996 to US Naval Research Advisory Committee; holder of nine US patents.



I was born in the South, a place called Danville, Virginia. It was a unique time for me in that I grew up under Jim Crow. In other words, when I lived there, there were laws that prevented me from riding in the front of the bus or going to certain movie houses. My family lived in a place called Liberty Hill, which was basically a project built on top of a landfill, one of the three or four places in Danville where black people could live. Work was seasonal, tobacco plantation work, so my mom worked six months out of the year. I grew up in that environment. It was a good environment, in retrospect, living in the projects. There wasn't a lot of crime. I had lots of friends, and there were lots of activities. Everyone in the neighborhood looked out for the children there. We all belonged to the same "tribe," if you will. There was a tribe that raised the children. I had lots of extended family members who would spank if necessary, and good solid teachers who were role models for me throughout my life until I left there.

In the mid-'60s, my mom decided to become an active civil rights worker. I went to live with my grandmother and my sister went to live with a friend. My mom became a civil rights activist, and spent a lot of time in and out of jail fighting for the cause. She met and worked with a lot of now famous people. Reverend Abernathy and all those guys were there. When the smoke cleared and the Jim Crow laws were lifted, my mom decided she couldn't stay there anymore and she took the family north. She took us to Baltimore, because her brother was there and because there was a famous engineering high school there that she thought I

could excel in. I started doing engineering when I was in the ninth grade. I don't know how old you are when you really start, but I was in the engineering high school.

I ended up with a dual personality. I did well in school, but when I was off, I ended up running with I guess what's now called a gang—I don't know, a group of guys on the waterfront. It was a Dr. Jekyll-Mr. Hyde experience, but in retrospect, I got a good education on and off the street. In fact, when you met me, I had a lot of rough edges. I was a bright guy, but I had problems because I was a little rough. I went through the engineering high school, Baltimore Polytechnic High School, graduated from there, went directly into a marine engineering trade school, and ended up going to Vietnam for a year as a licensed marine engineer at the age of eighteen. I was in the war as an engineer.



Edited and excerpted from an oral history interview conducted by Clarence G. Williams with James E. Hubbard, Jr., in Cambridge, Massachusetts, 23 November 1998.

You saw a lot of stuff.

I made a lot of money. I made a whole lot of money. I made so much money and I was gone so long that I didn't need to spend it. I made so much money that I came back—and this is the highlight of my life—I walked into my house one day and told my mom I was going to buy her a house and get her out of the ghetto. And I did. I took all my money, bought my mom a nice big house, my sister moved in, and then I went back to sea. I was just making that money, making that money.

I was a young engineer—Vung Tao, Cam Ran Bay, Saigon. I was all over Vietnam. When I got back, I had made a lot of money, but it had taken a toll. I had some problems, some severe problems. The gang that I grew up with, I got back with them. In the course of not even being back six months, my best friend in the gang died. I ended up in a depression. That's when you met me.

When I met you then, you were at Morgan State.

Yes, but the reason I was at Morgan was that I came back and I didn't want to work, I just wanted to hang out with my friends. My mom insisted I do something. Well, I knew about marine engineering, so I went to this government lab that did marine engineering and they said, "Well, we don't have any job openings, but if you were in school, we could give you a co-op." Morgan is literally a three-minute walk from my house; that's how I picked it and I got this job. I didn't care about Morgan, but I got this job as a marine engineer, which is what I liked doing. I hung out with my boys. Ms. McKinney was the head of the co-op department at Morgan.

She's the one who recognized that there was nothing that Morgan could do for you.

Yes. She was very disappointed because she saw me mostly playing there. I got straight A's essentially. That upset her a lot. Then when my friend died and I went into a depression, she became concerned and she started looking for opportunities for me elsewhere.

She wanted to get you out of there.

And that's how I met you. I was not interested in college. I was not interested in going anywhere. I was very depressed about my friend and I had a pocket full of money from when I was at sea. Ms.

McKinney kept bringing all these people down from Drexel and wherever to meet with me, and that annoyed me. When you came down, I was in that frame of mind, but I had never seen anybody like you in my whole life, ever.

What do you mean?

I had been all over the world and I had never seen anybody like you. I had been at Morgan for four years, wasn't even close to getting a degree, but I hadn't seen anybody like you, ever. That had an impact on me. It's strange. Even to this day, I have a feeling right now in me. I knew lots of black people, most of my life was black people, and I had never seen anyone like you ever. It was just overpowering. I didn't know what MIT was, but if you came from there, I wanted to go there. That's how I looked at it.

You had never heard of MIT before?

Sort of. My mom kind of had. We had heard a lot about Drexel because my father lived in Philadelphia. In fact, I actually had a Congressional appointment to the Naval Academy, and I turned that down and went to this trade school. So I had no interest in college at all and had actually turned down opportunities. Even at that point, I had no interest in college. You came in and I still didn't have an interest in college. I just wanted to be like that.

So you decided to come to MIT.

I dragged my feet a lot. I got back on the waterfront, drinking, having fun, and let all the opportunities lapse. There were deadlines. Even MIT's lapsed. I let them all lapse. I was having fun. Then my friend drowned by accident. I stayed at home, I was depressed. My mom got very annoyed and upset with me and told me I had to do something. One day I went down on the waterfront and, while we were drinking, one of the guys said, "Hey, Hub"—they called me Hub—"I got an aunt in Boston. You can go live with her for a while. That's where MIT is, right?" I said, "Yeah." He said, "Well, why don't you just go live with her? I'll call her up." He called her up. She was a dean at Radcliffe. I didn't know it. Her husband was on the board of trustees of Harvard. He was a judge. I literally flew up here on a phone call from him to her. Her son picked me up and I stayed out there with them. I hadn't written an application or anything to MIT, nothing.

I was running. I wanted to get away from Baltimore. I didn't even really care about coming here. I just wanted to get away. I just stayed out there for a week. I didn't do anything, playing with her son. Finally, she put her foot down and said, "I want my son to drive you into MIT and you get an application, boy." He drove me in and I met the director of admissions, an old white man. I sat in his office in jeans and a sweatshirt looking down. He asked me a few questions and kind of concluded he was wasting my time and wasting his time. He said, "Could you excuse me for a minute?" I hadn't filled out anything. He was wondering what I was doing in his office. Then he sent in a black man to handle me. It was a guy named John Mims. John Mims talked to me a bit and he said, "Look, I'll tell you what. I've got a student here working for this office on a work-study." He called the guy in, a Chinese student. He said, "He's going to walk you around in the next few days with this piece of paper and try to get professors to accept credit from Morgan for you. If you get enough credit, I'll process your application and based on what you say your grades are, we're pretty sure you'll get in."

So I did. For ten days, this student walked me around. Sometimes the professors gave me oral tests right there, sometimes they just signed off, and sometimes they gave me written tests. But after ten days, they had basically taken stock. I had spent four and a half years at Morgan. I wasn't even close to getting a degree, but I was having fun. I took jazz, art, some physics, all the math. MIT decided that they would transfer all that to MIT, all my math and physics, but they were just going to give me humanities credit for it. So I had enough humanities credit. I didn't have to take any humanities. Even my differential equations, they just gave me humanities credit for it because they didn't believe it was real differential equations.

So I ended up being a sophomore and Mims used that to get me in the dorm. If you're a transfer student, somehow you can't get into a dorm, but Mims did that thing he does and I ended up in the dorm with people like Kenny Armstead, John Arnett, Fred Foreman—the black leaders of the campus. I ended up right there with them, and my life started here.

What was it like when you look back? You've got a long history here that is very unique. I don't know of anybody

whom I've talked to who has as unique an experience as you have had, as far as being a student is concerned. First of all, you come here and you've been, like you say, at Morgan for four and a half years and they reduce it down to a sophomore. You've got to have guts enough to even accept that and to go through this place.

I made noise, but I've thought about this many times. Yes, MIT took my four and a half years of A's in physics at Morgan and reduced it to social studies kind of credit, but it was the best thing that ever happened to me. If they had given me credit for differential equations, I would have been eaten alive in my later years here, because the way MIT teaches differential equations and the way Morgan teaches it are very different. It was the best thing they ever did for me. I'm thankful for that to this day, even though I really raised hell back then. It was a good move on their part.

What would you say was the best thing about your undergraduate experience here and what was the worst thing about your experience here?

The best thing about my undergraduate experience at MIT was this, that over a period of three painful years, MIT raised my level of consciousness and took me into a whole new world that I didn't know existed. I've been living in that world ever since. It's a fantastic world. MIT reprogrammed me, reoriented me, gave me a whole new way of looking at my life, both technical and non-technical. It was extremely exciting. They taught me that there are no rules. The rules are for everybody else, not you. They taught me that there are no bounds. The only bounds are the ones that you mentally put in front of yourself. They taught me that there's a whole world out there, MIT alumni control much of it, and they're there to assist you. And I believed all that. When they taught me that, I didn't say, "But I'm black and maybe not," although sometimes I might have been thinking that. What was my best experience at MIT is somehow over the course of the years, and probably because of Herb Richardson, MIT actually got me to believe that and I ain't stopped since. Somebody here actually made this young black boy believe all that crap, and that was the end. That was my best experience.

My worst experience here? There have been a whole bunch of them, actually. You need to get specific or we'll be here for days. I had a lot of bad experiences.

I confined it to your undergraduate days. I haven't even gotten to your graduate experience.

When I came here, I was twenty-two. I was an engineer and I was successful. Every time I took any kind of quiz or tried to do any kind of homework, I got the lowest grade in the class or thereabouts. That didn't make sense to me. It did not make sense to me. I just couldn't comprehend that. I thought, "I'm not a dummy. I've got a whole life full of good stuff. What's happening to me here?" It just really depressed me and made my whole undergraduate experience a nightmare. The only reason I survived was that I went in and told the department head, "I don't care if I get straight F's, I'm not leaving. If you have anything on campus close to security, they are going to have to take me to the airport and put me on a plane and turn my ticket in, because I ain't going." That was just grandstanding. I was scared, I wasn't doing too good, and I didn't know why. They got this rule that if you get admitted here, you can do the work. That was true, but I was having a hard time adjusting.

How did you choose your field? When you started at this new and different place, do you remember how you decided that and what events and other influences were pivotal in that?

I have never wanted to specialize, ever. I always wanted to be very general and broad. At Morgan, the broadest discipline was physics. I had no interest in physics, but I didn't want to be boxed into anything. In fact, I was kind of embarrassed about it, so when people said, "How did you get into physics?" I said, "I came over here and I saw all these beautiful black women. I was looking at the majors and here was one that to me, at the time when I read it, said 'physiques.' So I decided, yeah, I want to major in physiques." There was like co-ed labs and I was like, "Yeah!" I tell people it took me four and a half years to find out it was physics, not physiques.

But anyway, when I came here I had the same problem. Within mechanical engineering, you can specialize in controls or fluids. I did everything I could to not specialize. I didn't want chemical engineering or electrical engineering. They sounded too specific to me. I wanted mechanical engineering, which was everything. If you remember, to make sure I wasn't a specialist, I took courses in one subject and did my graduate

research in something totally different. It drove everybody crazy. My whole life, I've been fighting. I want to know everything that was on God's mind. I don't want to be an expert in one corner of his mind. To this day, I feel that way, and it drives people crazy.

You may have to go beyond your undergraduate experience, because it's hard to do it without going into your graduate level, but talk a little bit about memorable role models and mentors in your studies and your career, particularly MIT mentors and role models. I think that's important to hear.

I came here at a good time because that was when BSEE was here, the black student organization. We got Black ME, Black Mechanical Engineers, up and running. There were some very strong leaders like Arnett and all those guys. NSBE got started and I was the second regional chairperson. There was James Clark, the first regional chair. There were just a lot of black activities and leadership things going on. I came here and was right in the thick and in the midst of it. I was blessed in that sense. Out of that interaction came the Office of Minority Education. I was here on the ground floor for all of that.

It was a wonderful time. The first role model, as I already indicated, was you. You had a profound impact on me. I've said it before. I had just never seen anybody that looked like you, that talked like you, that acted like you. You were a gentleman, you were a scholar. It was just a pleasure to talk to you. You just seemed like you had been beamed down from another planet. You said one thing to me that was a pivotal point. You said, "Jim, look, I'm not an engineer. I don't know what goes on in those classrooms, but whenever you need a place to come and cuss and cry and talk, you can come to my office." I told my mom that and she said, "That's all it takes." On that alone, I got started here.

Over the years, it proved to be a solid invitation. I mean, I used that many times. There were some incidents. When I came up here, I was rough. I was off the streets. I got into some physical problems here, confrontations. I ended up meeting Wes Harris, who was 5'10" and 180 lbs. of muscle. My mom met him and asked him to take the rough edges off me. We were two very strong-willed people, both very capable of doing tremendous damage to each other physically. Over a

period of my graduate years, Wes insisted—and you know how he is—and demanded that I “dot all my i’s and cross all my t’s.” So I did. Over those years, under the strong mentorship of Wes, I transitioned to become something of a scholar. He taught me how to write papers, he taught me how to read colleagues, he taught me how to be a hell of a diplomat for my people and the university and the field. He continues to do that, so I take my hat off to him.

Then the other person was John Turner, associate dean of the Graduate School. He offered a place that I could come to and rest my hat. Any issues that would arise, he actually could wield some power. Of the three of you guys, John was actually the guy who had his hand on some of the buttons that controlled my life. I will never forget the day that MIT decided to recruit me to become a professor. John wrote this four-page recommendation and it was like Shakespeare wrote it. He just waxed eloquent. It was astounding, it was absolutely astounding. I have never ever seen a recommendation like that before, then, or after. His chest was sticking out and he just did it up.

You three guys were role models. Then, of course, Professor Herb Richardson, who was head of the department, had a tremendous influence on me. These were white people in the mainstream who saw something in me and got my attention. We would get to a critical juncture where to go beyond that with me might do damage to their reputations. My mentors all chose to proceed with me at great risk to themselves. That’s when I was on board. I was a young wolf, and when you took me ahead into the forest like that, not only was I learning to hunt, but you had made a friend for life. So to this day, I keep in touch with Herb because he did that. He took great risks for me.

He sure did. I was thinking about this as you were talking. With the help of these people, along with your innate ability, you did some very outstanding things. One of the things that comes to mind that probably a lot of people don’t know is that you were, during the time you were here, one of the most outstanding teachers in this institution. To have come from where you had come from, I think what shocked particularly people like John Turner and myself is, “This guy has turned out to be one of the biggest powers here as a faculty member.” But as far as you were concerned, what things in this list of achievements that you made here stand out in your mind?

I had this sound deal with Herb Richardson, and that was that every time he took a risk for me and put himself in jeopardy, my payment to him was to work hard and win an award and this would make him look good. So over that period of time which you’re alluding to, I won almost every award the department had—community service, you name it. It worked out fine. Having mentors like Herb and Wes at the same time was great. Wes used to have this phrase he used to use, “the generation of scholarship in students.” That used to get me all big-eyed and giddy. There’s a friend of mine who always likes to say that black men have a unique way of expressing what’s on their mind. I guess when you put those two together, I did well in the classroom.

Students respected me, but they didn’t feel like I was a professor up on a high horse. They felt like they could approach me. You don’t know the real reason. I’ve got a simple mind. In order to understand things, I have to have it explained to me in the most basic of terms. So when I ended up explaining it to students, if my mother had been sitting out there, she would have got it. They loved that.

That’s excellent teaching.

To this day, I have to do that. If I can’t really go home and explain it to my wife, nine times out of ten I don’t understand it. I’ve been twenty years in this field, so I can give you the big words. But if I can’t explain it to her, I really don’t understand it, I just don’t. I use the part of the brain that’s more artistic. I’m not dominated by the analytical parts, so I’ve got to have a simple way of putting things. I ended up winning that teaching award, sure, and got great reviews every year that I taught here. I found out that during my first years here on the faculty, MIT was actually using me almost as an ambassador. People all over the country knew about me and my relationship to MIT.

I was a big fan of MIT. Coming up on that waterfront, I liked it hard, I liked it rough, and I liked the big cash reward. That’s what we all did. It’s the wolf’s mentality. You dominate people, you rough it up, and then you get the big reward. When I came to MIT, it was rough, it was hard, you had to dominate folk, and in the end, you got the big reward. I liked that, and I was a big fan of MIT. What I liked about MIT was that they weren’t trying to teach you mechanical engineer-

ing, they were trying to teach you a whole new way of looking at life. It didn't matter what you majored in. Calvin Lowe majored in physics, but we could sit down and we had the same way of looking at life. It was different and it was exciting and it was powerful. Any topic we wanted to, we could just dream up and begin to make headway into.

I've heard a number of you say that, that MIT just gives you a whole other way of looking at anything. Can you say a little bit more about that learning experience?

First of all, I went into marine engineering trade school and to Morgan and to an engineering high school. They all taught the same way. In order to graduate, they had a fixed volume of knowledge usually contained in these books that they wanted to make sure you knew, a volume of knowledge on a subject. After that, they were satisfied. You got your accreditation and you went. MIT does not teach any fixed volume of knowledge on a subject. They teach a way of thinking, period. The problems are just from electrical engineering or computer science to stimulate this way of thinking. They have no desire whatsoever to test you on any fixed body of knowledge. They don't give a damn. They just want to make sure that, at the end, you're thinking a certain way.

A very dramatic show of that was in my senior year, when I went down to New Jersey to a job fair at NJIT. It was crowded. There were probably a hundred companies there, and they were chomping at the bit to get to the NJIT students. Whenever I went up there, they had no interest whatsoever. I found out, for example, that Evinrude, the company that makes outboard motors, wanted an NJIT mechanical engineer because they knew how to use this book on heat exchanger design. In fact, I heard them talking. The Evinrude guy had studied from that book. He was like, "How about that problem in Chapter Six?" The guy's like, "Oh, man..." They were talking about that fixed volume of knowledge. I didn't have the faintest idea of what they were talking about, but the Evinrude Company wanted to hire this guy because they knew that he knew how to use the design tables for this heat exchanger which goes in their product. Me? I knew all about the first law of thermodynamics, and the second law. If you pushed me over time, I could probably design that particular heat exchanger, but I'd have to do

some math. They really don't want to hear that. They're just not interested in that. It was very dramatic when you went to job fairs, very dramatic.

That's one of the reasons, I assume, that some of the really elite places want people who think and can be creative. They will come after people like yourself who know just the general kinds of things that you can apply to almost anything to come up with an answer to something.

It's a pioneering way of looking at life. You have this suspicion that most of what's out there, you don't know anything about and neither does anybody else. In other words, most of what's out there is still available for discovery. You've got that suspicion that that's how it is, anyway. You can't wait to get to the edge of current knowledge and just jump out there. You know that once you jump out there, everybody's equal. Nobody knows any more than you do out there. You can come up with whatever you want to come up with, like anybody else.

Then having the credentials from MIT is something else. I'm in Washington a lot. I've been fortunate to become a technical advisor on a number of National Academy boards and stuff. There's nothing like those credentials, man. People will bother you. They'll poke and they'll probe to find out who you are, and once you lay them MIT credentials on, it's over. That discussion is finished. They may come after you some other way, but that discussion is over. Also, nine times out of ten, from the Presidential Cabinet on down, that ring is all over Washington, the MIT ring. It's everywhere. It's even been on a President before, but it's everywhere. I've got badges that will allow me to get into most buildings in Washington, DC. When I get in them, there's that ring somewhere. It's everywhere, just everywhere. Wes was the head of NASA aeronautics. It's always going to be that way. People will challenge you, but not about your technical capability. That's QED, it's a done deal.

Let me say something else before we go on, just to make a note. I was a black student who was born, weaned, bred, and brought on to the faculty by this university. None of it would have been possible if I hadn't had the complete and enthusiastic support of the whole black community. Once people recognized that something special was happening with me, "the tribe" banded together here to raise the child. The black staff here continuously worried about me, disciplined me, admonished

me, inspired me to keep me from passing up this opportunity, which I didn't know, and to keep me focused. It was truly a tribe here raising a child. I have to say that. I knew them all. I knew all the staff and faculty, because they all worried about me.

It's important, I think, to hear that.

You know, I knew them all, and they all looked after me. If I was acting up, they would spank me. If I did good, everybody's chest used to stick out.

Oh yes, no question about it.

It was a unique situation.

Well, you are unique. I think you and Jim Gates probably are the closest I have watched come from sort of like a child to manhood in a way that I would wish my sons to. You took it all. I remember times when people essentially wanted to know why you were here, when you were an undergraduate student. Even you questioned sometimes, "Damn, I must be in the wrong place." But you refused to give up. And then to see you end up becoming probably the most distinguished young faculty member in your own department, when these Joes even had questions while you were coming up. I know how Wes felt about it and I know how I felt about it and I know how John Turner felt about it. That was the most unique thing I've ever seen. I haven't seen anything like it since then.

I forget what year it was, but I remember when you and Jim Gates were here at the same time. What happened was that both of you left, and I said to myself that we really are not serious about black faculty recruitment. When that happened, out of all the things I had tried to do and other people I know had tried to do, if we couldn't deal with the two of you, I said, "It's gone." It was like bringing up the best. And MIT is still in you.

Jim Gates, I continue to watch his career. I see him on TV all the time. I'm very proud of him and he knows that, too.

I couldn't agree with you more.

Is there any advice that you would offer a young black person about to come to MIT as an undergraduate student or as a faculty member? I ask you that in two ways because you've experienced both. Say here's a young Jim Hubbard about to come into MIT on the undergraduate level. What advice would you give a person like that, knowing what you know now? And then for a young person who's coming as an outstanding faculty member into this institution, what kind of advice would you give him?

I still mentor undergrads, and NSF provides funding every two years to host young minority faculty in the country in mechanical engineering and civil engineering at a conference held in DC. It actually has become viewed as a kind of award. We pay all their expenses to come to the conference, and it's usually about a hundred of them. When they get there, I bring deans and people from all over to answer this question, to tell them what they need to know. In fact, we're putting together a book on that subject. There's this quote from Calvin Coolidge:

Nothing in the world can take the place of PERSISTENCE. Talent will not, nothing is more common than unsuccessful men with talent.

Genius will not, unrewarded genius is almost a proverb. Education will not, the world is full of educated derelicts. Persistence and determination alone are omnipotent.

I send it to both the undergrads and to the faculty. It's on my Web page, actually. It's basically talking about how education won't get you where you're going, persistence will. It addresses all those things that you think are important and dismisses them, and tells you that only persistence is important.

It's absolutely right. You can't start either road feeling like if you experience failure, it's over. You're going to experience failure. You're going to experience it over and over again. It's the way God set this world up. I just had two inner-city kids over touring the Photonics Center and I told them this. I said, "Let me tell you guys something. If you choose to sell drugs, you know what? It's going to be hard. You're going to be shot. You're going to go to jail. You're going to make some money, but it's going to be hard. If you choose to play basketball, guess what? It's a hard life. You're going to get injured. People are going to talk about you and harass you. It's going to be hard. Now look at me. How do I look? Making money, up here in the penthouse, a hundred million-dollar facility at my beck and call. Guess what? Life is hard. This is a hard life. There is no way to get around that—undergrad, grad, professor, whatever. God has set it up here as a series of very hard tests and you can't get around them. You can lie and say it's a cakewalk, but I'm almost fifty now, believe it or not, and I know better. I know better. So you ain't going to escape. Life is hard and you've just got to be persistent."

I saw this show on TV where they had the most successful entrepreneur in the history of the

world. The guy was sitting in a chair like this, and the announcer went on for forty-five minutes introducing all the great things this guy did. Then she says, "I can't wait to ask you the question that's on everybody's mind." He was all relaxed. She said, "What's your secret? How do you manage to build all these companies? What is your secret? You've been the most successful at starting companies." She's going on and on. He said, "I'm flattered by the introduction and the fact that you think I've got a secret. I don't have a secret. There's only one difference between me and any other entrepreneur out there. I've failed, just like they have, many times. You talk about the thirty companies that did well. You don't mention the forty that didn't. You don't mention the fifty times I've filed for bankruptcy. You don't mention the wife and family that I lost. The only difference between me and anybody else is that I never, ever gave up. I have failed. You bring the average entrepreneur in here, and for every time he failed, I have failed twice. For every pain that he felt, I felt fifty. I just never gave up. When I set out to do something, I will not give up until it's done."

So that's what I tell them. Find a way to do it. When I had my wolf pack over at Draper, we would sit down and we would map out our goals for the year. The idea is this. We're going to meet. Go away, be free, romp. These are bright guys. You can't micromanage them. You can't even manage them. They're alpha pups. I'd say, "Go out there and do whatever it is you're going to do. We're going to meet here on this day at this time and you each have your assignment." The only rule I had was that when that day came and we all got together, have your stuff. I used to tell them this and I tell your faculty and your undergrads this. There are excellent reasons not to have your stuff, reasons no one can argue with. I told my group that. You can come to the meeting and say, "Hey, Jim, I don't have my stuff, but you know what? I was on my way here, got hit by a truck, my head and my arm got cut off, and I couldn't make it." Guess what? I don't want to hear it. The only issue is that it's that day, and everybody has their stuff but you. I can't argue with your excuse. But the fact is, we failed. We needed all these keys to unlock this lock and move to the next step. One is missing. The only thing that matters is we can't go on. You've got a great excuse. Who can argue? The man's head and arm were chopped off, for

crying out loud. You're right. But the only real fact is, we didn't make it.

So I just tell them, "Have your act together." I tell everybody, there is a room that I can take you, whoever is listening to this, and we will go there. I know where it is. I know exactly where it is. I will take you in that room and it will be full of excuses that no one can argue with, not a single person. If you pick any one of those excuses, people say, "I know what you mean. You've got a point. I see why you didn't finish." I say your first thing is to say, "To hell with that. Nothing is going to make me fail." Then you've got to rely on others. You cannot do it yourself, you cannot. The first person you've got to rely on is the Lord. He will bring the others to support you.

It's wonderful. Even if you act bad, they'll still straighten you out and bring you along. I'm living proof of that, I am. My sons are next. This is what's so wonderful about life. All you guys, you don't even come close to having an inkling about how you affected my life. I'm almost fifty and I can recall every single night when I was somewhere thinking about something you guys told me. I can recall every incident when I grabbed one of my boys and sat down and told him something that you guys told me. Then he will do his sons like that, and on and on. You have no inkling the seeds you planted and how far that goes. But the Lord does, and it's very powerful. I claim credit for nothing. I've got a good life and it's because of you guys. I've done well and you taught me how to do well—I'm still struggling, though.

Is there any topic, any issue, any comment other than what you've said that you want to make that comes to mind as you reflect on your own experience or on the experience of other blacks at MIT or anywhere else?

I would say this. MIT is very hard and MIT is probably unfair. So is the rest of the world. You really shouldn't come here looking for all the reasons why the white man is making life rough for you, because you'll find them. What you should come here looking for is a whole new world that's going to be hard to get into, but when you do get into it, it's going to change your life. It's well worth it. You're going to find some people who are going to be intimidated by you, black and white. Be gentle with them. You're going to find some people who are willing to help you, and you're going to need them.

I don't even know how to say this, but no matter how successful you become, you're just one in a long line. You're nothing special in that regard and you're nothing bad in that regard. If you were to look at it all as the handwriting on the wall, you're just a little speck in that signature that we're going to leave here that's going to be signed over many generations. The signature is going to be bold and it's going to be proud, but it's not going to be all your signature. You're going to just have contributed a little bit to it. And that's fine, that's wonderful. If you can go away from here and have done that, I think you've got something to be proud of. I know lots of people who thought they were the smartest things to ever come here. I have a lot of trouble recalling their names now; I just can't quite remember who they were. But the ones who took the time to reach down and lend a hand, I'll never forget them. My sons will never forget them.

It has been a wonderful experience. It has been the hardest thing I've ever done, and that includes Vietnam. It has been very painful, but somehow I don't think you can avoid that in life. It has got nothing to do per se with MIT, but it is hard here. I think it's great. I come here now, sitting in your chair, and I get depressed just thinking about some of the memories. I was very sad. Even though it has been twenty years, this place feels the same. But when I put the whole puzzle together, it's fine. I can pull any one piece and it will upset me. When I put the whole puzzle together, I wouldn't have it any other way. I really wouldn't.

I think that's important to hear, it really is. I know your story better than most of these folks that I've talked to. To hear you say what you're saying, that's heavy. The institution really needs to hear this. Our young people need to hear this. Talk about perseverance, I don't know anybody who has more than you.

We had a good time, though. It was hard for all of us. You guys? I was too young to know how hard it was for you guys. You guys were under tremendous pressure. Any time this little young black boy dropped by, you had time for me. "Well, come by." I didn't know then, but I know now that you guys were getting the crap beat out of you.

Well, we got here because of people like yourself. That's one reason.