

INTERVIEWER: So this is the 150th anniversary celebration interview with professor John Deutch. And let me just briefly ask -- I know you were born in Belgium. Is there anything about your early life or your family or coming here that you think is relevant?

DEUTCH: Well, it was an important part of my early upbringing that I came here as a kid who couldn't speak English and I started school being unable to speak English. It provided me always with a certain different perspective from my classmates at the time and that's stuck with me a little bit. The foreign aspect in my background is important.

INTERVIEWER: Any other particular events or influences in your childhood that maybe pushed you in the direction that you took?

DEUTCH: No. I came from a family that was -- although they came to the United States because of the German invasion of Europe, they didn't come here in prosperous terms. They both were highly educated. My mother had a PhD in history. My father was an engineer with multiple degrees and so I had the good fortune of coming from a family which had a strong educational background.

INTERVIEWER: Do you have siblings?

DEUTCH: Yes. I have two sisters. An older sister, remarkably accomplished and smart person who was out of my range of accomplishments when I was a kid, and then a younger sister who's 10 years younger than I am, also quite accomplished.

INTERVIEWER: When it came time to go to college, what was it that made you decide on Amherst?

DEUTCH: Well, I would say that I was intellectually not mature at the time and it seemed to me that a small school would be best for me. Many of my classmates in previous years at the school I went to attended Amherst, and it was quite popular with my school. I applied to a number of small schools and found that Amherst was suitable for me and I entered there in 1956.

INTERVIEWER: And what drew you to history and economics?

DEUTCH: Well, the history part was my mother. Her strong -- ever since I was very, very small, introducing me to different historical studies books and the like. I always thought it was the most interesting thing that somebody could study. They could learn so much from it. It was always so exciting to me. And frankly, the other part of my education at Amherst was towards the sciences and especially mathematics. At that time, Amherst had a very strict liberal arts curriculum where everybody had to take a wide range of subjects, and so I had always a lot of mathematics and one or two physics and chemistry courses. But my roommates were all economics majors, and finally I couldn't stand to be doing something different from them, so I tagged on economics.

INTERVIEWER: Good liberal arts education.

DEUTCH: It was a great education, yes.

INTERVIEWER: So you did something that's pretty atypical, which is then you went to MIT to get another Bachelor's degree.

DEUTCH: Yes. Well, at that time, MIT offered this three-two program, which permitted individuals to get three years at one of the participating smaller undergraduate liberal arts schools and then to come here and get an undergraduate degree from MIT either in science or in engineering. And several members of my class at Amherst, I think three or four, took advantage of that and certainly there were others who did for other schools.

My father, who saw that I was headed towards getting a PhD in economics suggested to me that taking an interval to get an engineering degree at MIT would be a wonderful complement to being an economist. I think his hidden agenda was to hope that I would be an engineer full time, as he was, so he encouraged me to come here, become a chemical engineer, which was what he was, and he was quite friendly with many members of the department at that time, and so I entered here in 1959 as a chemical engineering student from Amherst after my junior year.

INTERVIEWER: Do you remember what your first impressions were of MIT, of the students and the faculty, the culture?

DEUTCH: Well, it was an extremely strong impression. It was unbelievable to me how competent these kids were at doing complicated engineering problems right away. The emphasis on problem sets and seriously demanding problem sets was quite a shock. What did also strike me is the average undergraduate's narrowness of interests. They were very interested in doing their problem sets, doing their disciplines, and had very little interest in the broader world, an emphasis on technical excellence, an emphasis on technical creativity, but outside of that, not much. It was a very different student environment than I was accustomed to at Amherst. It was very hard to adjust to it because I had to learn so much, but eventually it happened.

INTERVIEWER: Were there any particular mentors or influential professors you had?

DEUTCH: Always. I've always had good luck on influential professors, professors who took the trouble to pay attention to me and mentor me. One of the interesting things is that my faculty advisor at Amherst, Dick Douglas, a history professor, later came out and joined the faculty here at MIT and became head of the humanities department. So I had the great pleasure of having my freshman advisor from Amherst be my colleague here on the faculty at MIT. But there were several faculty in the chemical engineering department when I arrived who I found enormously interesting and enormously helpful to me.

Ray Baddour, who was subsequently chairman of the chemical engineering department, was my advisor and there were several professors who had a very profound impact on my education. Sherwood, Tom Sherwood, was a professor of chemical thermodynamics, and he was a particularly interesting person to me and very, very capable. And I also had as my research director for my undergraduate research project the famed and leader, really, of chemical engineering, Doc Lewis. I was one of the last, last people who had him as a research advisor so it was a very -- right from the beginning in chemical engineering, I had a lot of very good faculty.

My physics professor here, interestingly enough, was Jerry Friedman, who was at that time a younger faculty member. He taught me electromagnetism, and he and I have remained friends ever since, and I remember him as being a very fabulous teacher. I mean, I could go out with Ken Johnson, who taught me quantum mechanics, George Buchi, who taught me organic chemistry. These people had a tremendous impact on the way I thought about science and my enjoyment from it.

INTERVIEWER: Can you tell me a little bit more about that? How did your attitude toward science change based on your experiences with all these different MIT professors?

DEUTCH: Well, there was this really eye-opening moment to me when I encountered this problem, which I remember to this day in chemical engineering and could not understand why the result came out the way it did. The thermodynamics led to a particular result and the physical reason for why that result took place just wasn't apparent to me.

And I asked Professor Sherwood why this was so and he said, it had to do with the behavior of molecules and how they collectively behaved in order to reach this result, but he couldn't give me a good explanation. I would have to go over to the chemistry department and hear about it from a man named Walter Stockmayer, the quite famed MIT polymer chemist. Very, very good chemistry professor who later went to Dartmouth.

I went over and saw Professor Stockmayer, and Professor Stockmayer explained to me this field of statistical thermodynamics, which related the behavior of individual molecules to the macroscopic result that was predicted from thermodynamics. It completely opened my eyes. I had no idea that there was this way of thinking about the relationship between molecular basis of matter and the macroscopic basis of matter and it completely captured me. And I think almost at that moment, I decided I was going to go and get a PhD in physical chemistry rather than a chemical engineering, or by now economics, long forgotten. And I did so and applied to the MIT chemistry department and entered there, I guess in the fall of 1961.

INTERVIEWER: Did you think about going anywhere else? Why did you decide to do your PhD at MIT?

DEUTCH: I applied to a whole range of graduate schools at the time. I applied to -- I don't know -- maybe five or six different disciplines. I was still very much, and still am to this day, intrigued with the idea of the breadth of knowledge as opposed to being in one particular discipline. So I applied to a range of schools: economics graduate schools, law school, engineering schools and one chemistry school, which was MIT. But I don't know why I didn't apply to more chemistry schools. I applied to a range of schools.

I got accepted at them all, which made me feel that I had finally completed my undergraduate education adequately, and as I said, I'd fallen in love with this idea of studying statistical thermodynamics and entered MIT for that purpose, the chemistry department here. And of course, I'd been quite influenced by my discussion with Stockmayer. I said, if there was one Stockmayer, there may be others the same way. It seemed to me to just fit exactly what I wanted. In general, I think it's a very poor idea for a person to go to a graduate school where they've been an undergraduate, but this was a special exception.

INTERVIEWER: What was the focus of your PhD research?

DEUTCH: Well, I was fortunate in that regard too. I had as my advisor Irwin Oppenheim, who remains a faculty member here. He was at that time very, very demanding. I must say, over the decades, he's become less so, become more soft and gentle than he was at that time. And it was in the field of statistical thermodynamics and it was quite beyond me. I had learned to -- just like all good MIT undergraduates -- to do problem sets well. But then somebody said, now it's time for you to think a new idea up, have a new idea which is not a problem set.

The issue is to formulate a research problem and then to think about how to solve it. Probably the formulation of it is 70 percent of the task, but I had a very hard time the first couple of years and then I was scooped by another physical chemistry professor named John Waugh and he was working on a particular experimental issue, the electric field effect on magnetic resonance spectrum. And he and I started to talk.

We got along fine, humanly. And I saw that I knew how to solve this problem with him and we, in fact, did solve it, and my first two or maybe my first three papers were actually written with John Waugh. To Irwin's credit, my beloved advisor, he gave me the freedom to do that, and I had this quite intensive and very exciting time because there was a competition between a professor at Cambridge and John Waugh, who would be able to do this particular experiment first.

In any event, when I completed that round of work with Waugh, I was now more confident of my ability to do new things and went back to Irwin Oppenheim and quickly completed three more or less unrelated problems to complete my PhD, a problem in the magnetic resonance of hydrogen, a problem on the quantum effects of surface tension, and a problem on nuclear magnetic relaxation theory, and that composed my degree and off I went.

INTERVIEWER: So after your PhD, you wound up going to the defense department for a little while--

DEUTCH: No, no no, no, no, no, no. I went to the bureau of standards after getting my PhD and I worked with Bob Zwanzig, an entirely different person in both his-- the way he did science. And, of course, the bureau of standards at that time was located in the middle of Washington and had a very different climate than MIT, and I enjoyed that thoroughly, and I enjoyed the people there, and I spent a year at the National Bureau of Standards before I went off to join the faculty at Princeton.

You may be referring to the fact that throughout this period of time, I had been working in the Department of Defense, where I started in 1961, I guess, working there as a systems analyst in the Office of the Secretary of Defense. At that time, there was universal military training, and you had to do your military service one way or another, and through a combination of circumstances, I found myself working as a technical person in the Office of Systems Analysis at the Office of the Secretary of Defense in the Pentagon.

Because I had had this background in economics and because I knew something about technology, quite rare at that time in the Pentagon, I was well received there and participated with a lot of people, who at that time were referred to as whiz kids, who went on and did interesting things. That had a tremendous impact on certainly what I've done in the years since, but also in the way I've thought about problems and how I approach problems.

INTERVIEWER: How did you wind up back -- not back at, but how did you wind up going to Princeton and what drew you back to academia?

DEUTCH: Well, I was never really out of academia, and I figured I was doing so well at the Pentagon that it seemed to me that if that was a place where I could do so well, it couldn't be really a high-quality place. It was a little bit like the Yogi Berra or whoever it is -- if they like you, it can't be that good.

So in any event, I decided to go back to work and do my academic research. I also thought that the professional life over a long period of time in the Pentagon would not be as rewarding as being at a university. So off I went to Princeton and remained in contact -- when I went to Princeton, I stopped working in the Pentagon for a time, and then very shortly thereafter, one of the people who I originally worked with became secretary of defense, and he got me involved back in the department as a member of the Defense Science Board.

INTERVIEWER: Why did you choose Princeton?

DEUTCH: Princeton chose me. I applied to a number of schools, had offers from two or three. I probably made a mistake by going to Princeton. I went to Princeton because it probably was a more prestigious place, but my guess is, I would have been happier and scientifically better off if I'd gone to Colorado or Illinois or UCLA or some other place. The one interesting and nice part of my going to Princeton was that my college roommate, by complete coincidence, joined the faculty there at the same time I did in the economics department, and so I had my closest friend, really, there right from the beginning.

INTERVIEWER: But relatively quickly, you came back to MIT. How did that happen?

DEUTCH: Well, it was a combination of circumstances. I guess that it was apparent to me that I was not going to be successful in the chemistry department at Princeton. They were, at that time, very unsure of themselves, the senior faculty and certainly didn't like a young and abrasive person such as myself. They had some very good assistant professors at the time, all of whom left for one reason or another.

Bruce Alberts, who now or recently, was present in the national academy, for example, was there at the same time as an assistant professor. But they really, I think, had troubles with a person like me and at that time, I got two or three offers, and at the same time, MIT came to me and asked me whether I would be willing to come back and join the faculty, which instantly I did because there's a great difference about MIT and most schools. It's much more outwardly directed than many of these other universities, who have a tendency to spend most of their times looking inward at the relationships within the university.

At MIT, it's always an issue about looking outward. That creates different kinds of problems and stresses, but there's no question about it that for me it was a better fit. And of course, I now knew the department here, and frankly speaking, adored the then senior faculty in physical chemistry: John Waugh, Irwin Oppenheim, Jim Kinsey, Bob Silbey, John Ross. These were fabulous human beings, who I was completely comfortable with and happy to come back here, which I did, I guess, in 1970. I returned to the faculty.

INTERVIEWER: What role does teaching play for you? How important is it to you?

DEUTCH: Well, it depends very much on the particular context. I've always loved teaching the introductory course in thermodynamics here, the physical chemistry course. That is a very great pleasure to me, and certain undergraduate courses were tremendously enjoyable to me. I also adored having graduate students, individual students, who I could work with as an individual basis. I've had a lot of interesting experience with my graduate students and postdocs. So it's different pieces have different -- I think what I like to do best now is to try and teach subjects to -- which have in the classroom, people from very different disciplines. I've gotten more and more skeptical about the narrow-discipline orientation of education. Of course, the kids who come to MIT now are so much more capable than the ones who came when I started. It's entirely different. They are really so extraordinarily gifted and committed that it's a true pleasure to teach them.

I've always enjoyed teaching. We have very good teachers in our department. I wouldn't say that I'm the best, but I will always strive to be very competitive about it and want to do well at it so --

INTERVIEWER: Tell me a little bit more about the changes you've seen in the student body over the years and what you think accounts for that.

DEUTCH: I guess people my age were very, very heavily influenced by the 10 years or 15 years that we lost of students who were involved, really, in the Vietnam kind of disruption, a period of time when most of the students were highly separate from their community. They were uninterested, didn't like the government, didn't like what was going on in Vietnam, a lot of drugs, a lot of drug usage. It was a hippie degeneration. People weren't committed to a career. We lost a lot of talented young men and women.

Now today, you find that kids are eager to try anything out, don't mind failure, push ahead as quickly as possible, much less orderly in how they do their science, but nevertheless, equally successful at accomplishing new science.

I have one favorite story about what's happened in the student body here. When I returned this last time from Washington, in 1998, I guess, I wanted to teach this Introductory Physical Chemistry class, 561, and there was a lot of doubt about my capacity for doing it, so they asked -- they let Bob Silbey and I teach it together. Bob Silbey's one of my colleagues, another beloved colleague, who is a very, very good teacher -- I mean, a superb teacher.

And we taught this course and I started off teaching it and I gave the same hour exam in 1998 that I had given the last time I taught that part of the course. I guess it was 1988 or so, so about a 10-year gap. And the kids did 1 percent better on the first hour exam on average than they did in the 10 years previously. At least it showed I wasn't completely -- didn't mess it up. What is interesting is, the students I taught in 1988 were juniors -- sorry, 1988 were juniors and 1998, 10 years later, they were all freshmen. They'd just come forward that much more in what they'd learned and internalized themselves.

So the students are willing to do anything now. They're much more interested in start up companies. They're much more interested in working on things that have some social consequence or public consequence. So I'm a great, great admirer of the students at MIT. I recently had an opportunity to go to a student seminar at Amherst actually, with an Amherst person who is a professor at MIT, Gerry Fink, former head of Whitehead. I was also amazingly impressed by those kids also.

When you look at the class here or at Amherst, you'll see a set of faces, which are completely different than what was certainly here when I attended as either an undergraduate or a graduate and certainly different than what there was in the early '70s in terms of the number of women, diversity and the like, so it's a very different and I think a much more appealing and capable student body.

INTERVIEWER: I wonder if that change is the result of growing up with technology?

DEUTCH: I don't know. I think it has a lot to do with the students' own appreciation of the world. I don't know what -- how to explain it, but I think it's more than just MIT. As I said, I just saw the same thing at Amherst last week so --

INTERVIEWER: I have a list of these roughly 10 areas of your expertise and I'm wondering if you could -- can you explain what it is that draws you to a particular area to study? What interests you about a problem that sustains you in research?

DEUTCH: Well, in the years when I was active and took this very, very seriously, what I regarded as being the intellectual equivalent of war, if you like, the subjects which really would attract me were a place where an explanation was missing about this connection between observable microscopic behavior and molecular behavior, this difference between the microscopic and the macroscopic. A few of the problems I will just briefly describe to you.

One of them was this problem about the orientation of water molecules or any molecule which has a dipole in a liquid because of the fact that their interaction between two dipoles does not decrease very rapidly with distance. The further you go out, the more molecules you're reacting with, and it becomes a problem. And, in fact, it depends then on the whole shape of your container.

Now nobody says that there's a property for water or any other dipolar fluid which depends upon the shape of the container that it's in. So there has to be an explanation for how this shape dependence gets compensated for and does not really appear in the properties that are measured on a macroscopic basis. In the late '70s, I really got into this in very, very serious terms. It actually relates back to the problem I mentioned to you earlier about the orientation of molecules with John Waugh. It solved it and I thought -- I think that made as good a piece of work as I've done. I enjoyed that very much.

Very recently or more recently with my great friend Francis Low, former provost here, he and I came up with another problem where we found a professor at Stanford, a quite distinguished professor, Harden McConnell, who had talked about the shapes of molecules, shapes of aggregates of molecules, and had done very careful numerical calculations of these things. Francis and I realized we could solve it analytically, which we did. And marvelously, the analytic result and the numerical result agreed. Probably didn't have many people in the world who noticed it, but professor Harden McConnell noticed it. He thought it was the smartest thing he'd ever seen.

I've done work on light scattering from fluids at an early stage and that has had maybe more effect on experimentalists -- early work that I did.

And then I got interested in chemically induced dynamic nuclear polarization, but all of these are -- I hope they don't sound like stamp collecting, but they're all very careful analyses of different places where understanding the microscopic behavior leads you.

And then I've had good reactions with experimentalists. I have a very close relationship, both personally and professionally, with George Whitesides, a professor who was here many years and is now at Harvard. He and I have written -- I don't know -- a dozen papers, mainly where I try and analytically help him interpret certain experiments that he has. So it's been a happy scientific research career, but you've had a lot of better scientists sitting here in this room getting interviewed than I am. I'm a good scientist, but I'm not one of the really great scientists that we have around here.

INTERVIEWER: No, but I can see your enthusiasm.

DEUTCH: Don't worry about my enthusiasm.

INTERVIEWER: Can you tell me a little bit about the work you've done at the Industrial Performance Center?

DEUTCH: With Richard Lester?

INTERVIEWER: Mm-hmm.

DEUTCH: I've done effectively no work at the Industrial Performance Center with Richard Lester. Richard Lester is a very good friend of mine and a person who I admire very much. We've taught a course together on technology applications from 1992 to last year and we've written a book together. The purpose of the course and the purpose of the book was to describe to students from very different disciplines what are the ingredients that are required to make a technology work, whether you're talking about a public technology or a profit making technology for a new company. That's been a very exciting and important part of my life here, and I think the students have been really very enthusiastic about it. The course of that, I've become very close to Richard. Richard has this Industrial Performance Center where he does lots of different activities, and I encourage him, but I'm not at all involved in it, specifically.

INTERVIEWER: Okay, and how about the Center for Energy and Environmental Policy Research?

DEUTCH: Well, there's a short story there and a longer story there. That center was basically headed by Paul Soskow, and Paul Soskow and I are very close friends and they're different -- it goes back to my interest in connections of energy since I served in the government in energy issues. So I've been participating in that back and forth for many, many years.

But of course, now it's all part of this Energy Initiative that Susan Hockfield launched when she came here as president. I've been involved in previous initiatives by previous presidents, which hadn't work. This initiative has encompassed now the work of the Center for Energy and Environmental Policy and the joint center and many other activities. It is being headed by Ernie Moniz and Bob Armstrong. And I'm very heavily involved in that, and I think it's been highly successful, and I'm very much involved in that right to the present time. I'm on the Energy Council. and I think that this Initiative on Energy speaks to another very important trend at MIT, and that is how do you translate disciplines into subject matter problems, whether it's in communications or whether it's in health care or whether it's in energy. So I'm very much involved in that. I think it's been a very positive effect. The students love it. It's been a very successful program.

INTERVIEWER: You've also worked with the Joint Program on Science and Policy of Global Change.

DEUTCH: That's the same. That's the joint program, which involves Ron Prinn and Jake Jacoby. In there, there is probably one of the features that I most admire about MIT, and that is this development of this model called the EPP model. I don't know whether I'm going to have it exactly right, but it stands for the Environmental Policy and Planning assessment model or something like that.

But it's a joint effort by Jake and Ron Prinn to have a model that, first of all, simulates the geodynamics of the atmosphere and includes also the connection with policies which will result in different emissions into that atmosphere and thereby globally -- regionally, globally and in different industrial sectors, have different impacts. So you have a single, more or less consistent, framework for analyzing both the technical aspects of the problem and the political and economic aspects of the problem. So I'm a great, great admirer of the joint program. I think that it's one of the real achievements of MIT.

INTERVIEWER: I'd like to spend a little time talking about MIT's Energy Initiative and all of that. How did you first get involved in that?

DEUTCH: Well, first of all, I've been consistently involved in that. I believe the first one I was involved with was an Energy Initiative in the 70s -- I'm sorry, must have been in the early 80s. I'm not quite sure whether it was -- which was actually chaired by Ray Baddour about setting up an Energy Initiative at MIT. And that was done and we set up an energy lab at that time and it really didn't -- wasn't successful. But it wasn't successful for a variety of reasons.

Part of it was the absence of government funding, part of it was the unwillingness of busy faculty, who had other things to do to pay attention to it, and perhaps not with as a profound an intellectual basis as it might. And I've always -- when I spent time in the energy department and came back -- I've always had an interest in how MIT was doing in this. and nothing has really worked well.

Then comes this initiative by President Hockfield. I think by her own admission, she said she didn't have a very clear idea about how she was going to get it done, but she did think it was an important subject. And she turned to a committee, first of all, to help plan it, asking Ernie Moniz, a colleague of mine, to lead it, and he took an approach, an approach evolved to it, kept gaining support more and more from the private sector, from the government, and also bringing together different people in the institution who cared about these energy problems, capturing the incredible interest and enthusiasm in the students. So it has become a very -- I think one of the -- certainly one of the great achievements of Susan Hockfield's presidency. And I have the greatest respect and admiration for the way Ernie Moniz and Bob Armstrong have run this initiative. I think it's in the best tradition of MIT.

What I like best about it is that it mixes people from these very big disciplines. These energy studies that I mentioned to you that I've been involved in on nuclear, coal, and now solar, have the excitement, both for the students who were involved, but also for the faculty of mixing very different disciplinary outlooks to address a particular problem.

INTERVIEWER: So I'm sure you have a lot of experience as a supporter of expanded nuclear power, explaining to those who are afraid of it why they shouldn't be. I wonder if you could speak to that.

DEUTCH: Why would you do that? Why would you explain to people who are afraid of it?

INTERVIEWER: How do you -- how do you explain the benefits?

DEUTCH: I'm from the government and I'm here to help? Is that the argument that you think would work with them? I think the only way to convince people who are skeptical about nuclear power is to point to performance, good performance. And if there isn't good performance, it's hard to change their skepticism. I work on the performance part of it, not in explaining it to them. Actually, American people are not dumb and telling them what they should think and why they should think it is not, in my mind, a successful approach.

If you say to them, look at this and draw your own conclusions here, you're in much better shape, but you then better be sure that what you're telling them to look at is really functioning as well as you think it does. So I've always on this particular issue, which I do care about, I think the American people were badly misled by leadership, technical leadership, even MIT technical leadership, about how easy and great nuclear power was going to be. It didn't turn out that way. So to be a technical person, to wander in and say, here's what you should think about it, strikes me as not being credible or effective. So I think it's much more important to work on how to make nuclear power function as you want it to function and let people look at it.

INTERVIEWER: So how do you see or what do you see as the answer to our growing energy problems? What combination or solution is out there?

DEUTCH: Well, I urge you to come to my Godkin lecture at Harvard on May 3rd when I address this particular point. But I think that the first acknowledgement has to be that we fail to deal with energy as a society, at least since the early 70s when we had these oil interruptions, OPEC in '73 and '78.

So before you're saying what you should do, you better see -- ask yourself why hasn't it worked up until now? And I actually believe that our political structure is unable to deal with these very complicated, long-term, socially important issues, health care, of course, being an obvious immediate example. But this is more complicated even. Not maybe more complicated, but it has the additional complication of huge international consequences everywhere, huge international linkages.

So I really think that we're not going to be able to cope with our energy future until we change the political system that is dealing with it quite significantly to take into account this complicated interaction between international subjects, international aspects, economic aspects, technical aspects.

You say, well, how are you going to change your political structure? Well, I don't have a clue, but I do think that the first thing to do is to recognize that that's where the problem is. The fact that a president -- I sat in the Rose Garden with Jimmy Carter. Jimmy Carter says, we're going to have 20 percent solar energy by the year 2000. Everybody cheered. It was progressive, modern, sustainable, wonderful, but now we're past 2000. We have the same percent, or maybe slightly less, solar energy than we did at the time. So I'm very, very cautious.

I mean, first of all, you have to really understand what has going wrong before you can repair it, and what has gone wrong is a whole sequence of deeply embedded parts of our political structure, of reaching compromise by trading stuff, being unclear about what the legislation is really supposed to accomplish or can accomplish. Political leaders who find it expedient to tell people what they want to hear. So I don't think it's -- I wish I could tell you we can solve the energy problem, but all the evidence is that we can't. So our future generations will be paying more money, having more disruptions, dislocations, than they should have because we haven't managed it properly.

INTERVIEWER: It's the government that really doesn't work for the size of the country anymore, does it?

DEUTCH: And the complexity of the issues. We ought to own up to that a little bit more than we do.

INTERVIEWER: What about coal? How do you see coal sort of -- you're a proponent of coal and carbon sequestration.

DEUTCH: Correct, correct. Well, coal has got a very serious problem if we don't have carbon capture and sequestration , which, as you know, captures the CO2, the product for combustion, the carbon dioxide, and places it underground or in deep underground aquifers so that it doesn't go into the atmosphere.

I noticed that the day before yesterday, or maybe the last week, President Obama announced the formation of an Interagency Committee to address carbon capture and sequestration. Well, now there you should take an intake of breath and say, wow, isn't that terrific that he's doing that, but this is 10 or 15 years later than it should be. And forming an Interagency Committee is a distant cry from having several projects underway which will demonstrate to the American people in a way that did not occur in the case of nuclear power that this is an acceptable and affordable and workable technology.

So I think carbon-captured sequestration, where the roadmap is very clear. This is not a matter of huge uncertainty. Our inability to make progress on it at a time when people are thinking about building new coal plants, and certainly are building new coal plants at the rate of one or so a week in China, not making more progress on it is a very serious matter. So I think the story of the carbon-captured sequestration is a vivid illustration about the inability to implement -- talk a lot about it, but an inability to implement.

Of course, it has the worst effect on policy people, the worst effect on legislature, because you say, this carbon-captured sequestration is scientifically possible. They assume from that that it's a reality, that it will be there, but it's not going to be there unless a whole series of projects go underway to demonstrate its positives and negatives. That hasn't happened yet. So that's an example of the frustration I see at the country's inability to move forward on these important energy issues.

INTERVIEWER: Is there a -- do you have an image or an idea in your head about what MIT's role should be in helping to solve the energy crisis?

DEUTCH: MIT's role? I mean, as an institution? Probably less than what others might think. I think the most important thing, of course, is to educate the students so they are equipped and motivated to deal with the breadth of these problems. That would be my first -- now it's not the way we educate them. We educate them again in depth, with disciplinary depth rather than -- it's hard to strike that balance. There are things you give up and it's a difficult thing to do. But the most important contribution we can make is the students.

The next is, in certain areas -- and here you can do some by design and some is really a question of fate, about the interest and capability of your faculty -- some real research contributions. And we see that happening to a good degree and I would say to a strong degree compared to our competitors. Being involved as an institution beyond that, I'm not sure, really. I don't know what you had in mind, but --

INTERVIEWER: I don't have anything specific in mind. I was just wondering whether you -- because of the environment here, whether you saw this as a good place to work on some of those problems.

DEUTCH: I think -- I mean, I think, as I said, I think this Energy Initiative has worked well. I don't know of any other school which can do that. I noticed that Harvard has no such interdepartmental effort. I'm on the advisory committee of the Stanford effort, where they have a different approach and very impressive, but certainly not stronger than MIT's approach. I think our ability -- it depends upon the quality and commitment and interest of the faculty. That's what the bottom line issue is.

INTERVIEWER: It also seems to me that one of the things MIT has in its favor is it seems to be more comfortable with the interdisciplinary approach to problem solving than a lot of other institutions.

DEUTCH: Much, much better than other institutions but still not terrific. Still not terrific.

INTERVIEWER: I want to talk a little bit about your experience in administration here. When you become chair of the Department of Chemistry, what was it that made you decide to get into administration?

DEUTCH: When I became chairman of the department, three of my colleagues came into my office and said, you got to do this. The department had been in some trouble financially, and there was a lack of clear direction, and they said that everybody wants you to do it and you got to do it. I said yes and it turned out to be extremely, extremely rewarding and easy to do. It was easy to do because my colleagues at that moment saw that they needed a little bit of discipline, if you like, and one -- turned out that with going to the higher administration at MIT and saying, we have this financial problem, here's my proposal to repair it. The moment I had a coherent plan for doing it, they said yes, so that within a week's time, the financial problem had gone away. I had some good fortune about tracking outside money.

INTERVIEWER: Let me interrupt you just for one second. Okay, so you were talking about -- you had solved the financial problem of the department.

DEUTCH: So the faculty wanted me to do this. We had some luck on new appointments also. We hired some strong people and probably the best thing was that I was only there for two and a half years or so, so I had no time to build up problems. My colleagues as chairman were Frank Press, who was earth atmospheric and planetary science, and Herman Fishbach in physics.

I loved them, and I thoroughly enjoyed being chairman. It was only for two and a half years, and so when I left, they were angry, and I tried to convince the then-president Jerry Wiesner and the provost Walter Rosenbluth that they should take Jim Kinsey as my replacement, and they were very skeptical about whether Jim Kinsey could ever do anything as brilliantly as I had done. But in fact, he turned out to be a superb chairman, and in the longer view of things, probably more important than I was in the department but I thoroughly enjoyed it.

INTERVIEWER: Was it a difficult or easy decision to become dean?

DEUTCH: Becoming dean was a less easy decision and I remember when Francis came, Francis Low was at that moment provost, and he came and asked me to be dean. I'd been away for awhile in Washington. I'd come back and I sort of had a couple of years of real pleasure being back in the faculty and being involved in a lot of outside activities, and I didn't really see -- and MIT deans are -- this might offend many of them, but it's true. They're less important than chairmen or provosts in a way. I also loved it, but I was a bad age for it because I was too young to be dean. What were you -- how do you -- what do you do next? And so on. I had no great ambitions to be an academic administrator.

And then Francis did something which I thought was really unfair. He got Nan Freeland, who was the dean of humanities and social sciences, an economist, to come and see me and convince me to do it. And she made a big impression on me. First of all, I was very, very close to her and admired her quite a bit, and secondly, she pointed to a need to knit the sciences and humanities and social sciences closer together, which is again consistent with all I believe, especially about undergraduate education. And so probably as a mistake, I did it. It was probably a mistake, but I did it.

INTERVIEWER: Why do you think it was a mistake?

DEUTCH: Because you -- there two reasons. First of all, I'm not sure what deans do. The best thing I did as dean is I hired Doreen Morris, who was then a very, very junior person to be my financial person and that ended up being my biggest contribution to the Institute. She's really been, over the years, tremendously effective. But I'm not sure what deans do and why they're needed. I never found it very time consuming. I never found it hugely interesting. And it means you don't do something else. You're a dean. You don't do something else.

INTERVIEWER: So why is it that being a department chair is a more appealing position?

DEUTCH: In the MIT system, in contrast to, let's say Harvard, the department chairman has complete responsibility for the personnel management, the academic management and the financial management of that unit. And the choices are largely up to him to formulate. He doesn't have full- decision authority, but it's his responsibility to formulate them and bring them forward and to convince the different constituencies, namely, his faculty and the administration, if something should go forward. When you're a dean, you're just judging these things.

INTERVIEWER: Sounds like it's not as intellectually rigorous.

DEUTCH: Well, I'm not sure either of them are intellectually rigorous, but it certainly is less intellectually rigorous. But anyway, if I hadn't done that, I might have done something very different with my life.

INTERVIEWER: Can we talk a little bit about the School of Science? What do you see as its main strengths?

DEUTCH: I don't see many strengths anymore of the School of Science. I have for many years been saying that this division of MIT into science and engineering is bad. It's bad intellectually. It's bad with respect to education. It fosters this stamp-collecting business of getting deeper and deeper into discipline with less and less relationship to anything else. So I think that the School of Science, from the time Jerry Wiesner was dean right through, has become more and more focused on a historical view of innovation technology and intellectual activity, which is discipline oriented with a certain set of people thinking new ideas and another set of people applying ideas -- what are scientists and what are engineers? That whole distinction, if you actually go and look at what people do these days in biotechnology or material science or computer science is gone. So my view is that the School of Science is a generally -- this is not an MIT specific problem -- is a force for no change and wrong emphasis. And organization does matter, but there must be a better way to organize yourselves. It was a perfectly reasonable way of organizing yourself 70 years ago. So my view of the School of Science is it's just a millstone, really, of the system as a school.

INTERVIEWER: Do you think that studying science at MIT is different for students than studying it elsewhere?

DEUTCH: No. No, I mean, there's a high approximation. You mean, because they're at MIT, the chemistry student has a different view than if they were a chemistry student at Harvard?

INTERVIEWER: Right. Are the approaches different?

DEUTCH: No. There may be some -- a little bit more -- we went back to this -- more interdisciplinary activity here than there is elsewhere, more interdisciplinary centers, but no. If you go to Stanford, it's similar. I mean, not inherently very different.

INTERVIEWER: So how do you get academic institutions to adopt a more interdisciplinary approach?

DEUTCH: Well, not everything has to be interdisciplinary and this business that I was talking about, about science and engineering, it's not an interdisciplinary point. It's a point which goes to the character of the underlying technical activity. That doesn't have to be interdisciplinary at all. Those are two different subjects. Making institutions that are disciplinary has on one degree kinds of difficulties with it, mainly, what level of the educational system do you introduce, and secondly, how do you make appointments?

The other subject we were just discussing, which has to do with the fiction about this distinction between science and engineering, has to do with the evolution of the underlying intellectual enterprise. So I can show you -- pull a person out of electrical engineering, put him next to a physicist and put him next to a physical chemist -- say to you, what are the disciplinary differences between these guys? The answer is zippo, none. Some of that may be inevitable but your whole enterprise is structured about something which was for good reason put into place in the 1950s and makes no sense now.

Science took a huge jump away from a very empirically- based engineering discipline that doesn't occur anymore. So it's not an interdisciplinary point. It's a point difference. The distinction between science and engineering has vanished, vanished in the teaching, in the faculty's activity, but not in the organization, on how you promote people or give them tenure or things like that, or how Washington gives money. So that's a very hard problem, but I do believe that we should be much more adventuresome about mixing up our schools.

INTERVIEWER: Do you think it would work -- a solution would work better as sort of a top down solution, or you think students will make the change when they start making demands?

DEUTCH: Students, no. I don't know. I mean, I don't have an answer to this question. Top down solutions probably are not - you have to have somebody who's willing to encourage change, but it has to be something which the faculty eventually has to grab. Maybe start it in one area. You don't necessarily have to do everything all the time. There will always be people who are doing completely -- I don't know what the right word is. Pure mathematics is never going to fit into this as comfortably as applied mathematics. But there has to be, in my mind -- different organization would be much, much better, much better and much more in tune with the realities of the technology.

INTERVIEWER: So what made you decide to accept the position of provost at MIT?

DEUTCH:

Well, there you see, you're already on drugs. You've been dean. And Francis stepped out as being provost. I thought he was a fabulous provost, a fabulous human being. And out of that experience, he certainly became one of my very, very dearest and closest friends, he and his wife. Unfortunately, they've both passed away, and it's very much a subject which is every day on our -- Pat and I were talking about yesterday how much we miss them. We became very close. We had houses together, next to each other, very close to each other at the beach. Saw a lot of each other socially. Very different personality, but I loved the man very much.

He asked me to be provost, or the president asked me to be provost, and I guess then it seemed natural, and I saw that I could get out of and maybe even make work better this problem of deans and inner school sorts of stuff. Paul asked me to be provost. It's very, very curious. I mean, he and I look so different. We appear to have different personalities. We do have different personalities. But in point of fact, he and I think so similarly, it's scary. He and I got to a point where we could anticipate just by looking at each what the other person was thinking.

The first few days when I was provost, there was this kind of Kabuki routine. He'd come in my office. He says, I'm thinking of stapling this piece of paper. Is it okay with you? And I'd say, Paul, I'm thinking of xeroxing this document. Would that be all right? Because we were so sure that we were going to clash. And very shortly thereafter, we developed a working arrangement that was a real pleasure. I've never, ever enjoyed working for anybody more than I enjoyed working for him in large measure because of this underlying similarity of purpose, the attitudes and values, even though, looking at us, you'd think it was entirely different.

I have this wonderful story about -- we worked together for six years. We never really had a serious disagreement. Six years, I guess, because there was this one year [INAUDIBLE], and at the very end, it was a tenure case. And he came to me. He said something about it and I said to him -- I disagreed with him. I had a different view of how this tenure case should be decided. It had some providence. I couldn't -- I don't even have the slightest idea who it was anymore. We had an interchange on it and I went home that night and I reflected on the fact that his idea -- his points were really quite pertinent and I guess basically, A, he's president; B, his points were quite pertinent. I'm changing my mind. I'm going to be against this when I was for it or for it when I'm against it. I forgot even what direction it is.

I came in the next morning, went to his office, and said, Paul, I've thought about this overnight, and I understand what you're saying and I've switched my view. And he says, well, that's a problem because I've thought about it overnight and I've switched my view, too. And we both laughed about it and on we went. That's an example about how close we were.

So that was a pleasure, being provost. I generally enjoyed being provost. I had a piece of great fortune, which I didn't anticipate at the time. When I'd been dean, the dean of engineering was Gerry Wilson and the vice president for research was Ken Smith and since I was known to be a hard case, tough guy, there was a very -- it was a presumption that these two guys would resign because they would find it impossible to work with me.

I could remember going to see both of them. I went to see Ken Smith and I said, Ken, I want you to try and stay here. He says, I don't see how it could possibly work out -- and Gerry even more strongly. Gerry had bested me often as dean. I mean, he and I had become friends but he was -- but I didn't want lose these guys, but it looked to be impossible. Francis thought it was impossible. They both stayed and they ended up being fabulous, and again, made my job enormously easier because I had people who anticipated how I thought and worked and adjusted to it. It allowed me to delegate authority, huge amounts of authority. I never even thought about the School of Engineering because I had Gerry Wilson was there. I didn't have to think about many complicated issues because Ken Smith was there.

Contrast that with the current provosts, who are buried, buried in detail and decision making, which you can avoid if you can appoint somebody with whom you have confidence.

INTERVIEWER: So as department chair and dean and provost, what are the things you look back on as the things you're most proud of?

DEUTCH: You mean accomplishments? I don't think about things that way. I think that I -- at every appointment, I always tried to get better people. I got very, very proud of some of the things I initiated and some of the things that I encouraged, like Gerry came to me with Project Athena as an initiative, and I'm very proud of having endorsed that, put all my muscle behind it to get it done, which has been a huge success. We had a study on industrial productivity headed by Mike Dertouzos, which I was very much involved in getting started. So there are matters like that, but I'm not very good at giving you a list of what I did right. Better give you a list of what I did wrong, but I don't like to talk about that either.

INTERVIEWER: Okay. Can you talk a little bit about what it was like to work with Jerry Wiesner?

DEUTCH: Well, Jerry -- I knew Jerry since I was in the Pentagon as a very young guy. I happened to run across him then, and he and I had this similar interest in working in Washington. He was very much a mentor to me. Our political views were wildly different, wildly different. His political views are like my wife's. My political views are like somebody over on the right wing somewhere. So we had very different political views but I always found him the most interesting guy technically, and we enjoyed talking to each other about technical stuff and he always gave me advice. When I had a job offer in Washington, I'd go to him. He'd say yes or no. When he said no, I didn't do it. When he said yes, I did do it. He got me involved in Schlumberger, which he was a director of, which I was a director of for 20, 25 years after him. Now Raphael Reif is the director of.

So we were very, very close friends and he was dean of science when I was -- originally came to MIT. He was president when I was chairman. We always had very close relationships and I have the highest regard for him. He's really, in a way, a model of the kind of person that I would like to be like.

INTERVIEWER: How would you describe him?

DEUTCH: I would describe him in what way?

INTERVIEWER: Well, if he's a person you'd like to be like, what characteristics make you admire him so much?

DEUTCH: Well, I think it's this -- the aspect -- he certainly had a gorgeous wife and he got along fabulously with his wife. That's one thing which I admired. Layla was a really terrific -- that's probably the most important thing. But he has the same thing, which not everybody has to have, which is try and make technology work for the country whether it's in defense or energy or what have you, be willing to interact with private firms and trying to imagine things in terms of bringing in new research programs or new, better people in the faculty. In all ways, he was a -- he was very close to Kennedy and had a good relationship with the political system. He was a very good political guy. I admired that too, so --

INTERVIEWER: What does it mean now for you to be an Institute Professor?

DEUTCH: What do you mean, to be an Institute Professor?

INTERVIEWER: How has it changed your relationship or what you do or --

DEUTCH: Not a bit. I mean, I'm treated today at MIT as an important historical figure. Nobody bothers me. I'm treated fabulously, unbelievably well. It goes from small things, like two years ago I had to move my office from one side of the hall to the other side of the hall. The whole system made it so wonderful and simple. I told these guys who moved me in a day and a half and hung up all my pictures, I said I was going to move every year, I enjoyed it so much. They treat me beautifully there. They gave me a huge birthday party last year. It was terrific. I was completely startled, delighted to win this award last year for exceptional service to MIT. So I'm treated here so magnificently. Nobody puts administrative burdens on me, but I don't associate that with being an Institute Professor. I'm an Institute Professor. That's all I am.

INTERVIEWER: Just payback for service, probably.

DEUTCH: Well, that's not what Institute Professor's supposed to be, payback for service. It may be, but that's not what it's supposed to be.

INTERVIEWER: No, but maybe that's why you're treated so well.

DEUTCH: I see. I see.

INTERVIEWER: You've written more than 100 books and articles. Do you enjoy the writing and publishing part?

DEUTCH: I do. I do. I like to try and make arguments in paper, in writing. This goes back to Amherst. If you can't write down an argument so that it has critical scrutiny, it can be analyzed and people can object or support it, you don't really know what you're talking about. So I'm very much a person that the writing is, or the speaking, but especially the writing especially, is what makes for knowledge. And so I do as much of it as I can and I enjoy doing it. I enjoy doing it very much.

INTERVIEWER: What's kept you at MIT?

DEUTCH: What's kept me at MIT is that I've always loved it here and it's always been terrific for me. As you know, I've been away twice for four years in government service so it's not as if I've had all my professional career here. I think that the occasions when I've had an opportunity to go somewhere else, it's almost been accidental that I stayed here. I've had the opportunity to be a president of universities before and at least in one case, I probably look back at it with nostalgia. I might have done it.

When I stopped being provost in 1991, I was made offers. Both Harvard and Stanford offered me professorships and I came close to going to Stanford, but I'm not sorry that I stayed here. With hindsight, there's some marvelous things about Stanford but -- so I had these opportunities and whether you say yes or no is, I think, completely a personal matter. I've always been treated magnificently here. And I do think it's important not to stay at a place your whole life so you have more experience, but I did have that opportunity in a number of different ways.

Incidentally, I don't mind when faculty leave MIT. Unlike my colleagues who think it's a catastrophe, I think it's always a good thing. It's a refreshment. You can hire good people yourself. So if you're aggressive about hiring -- I don't want people to leave, but if they leave, I don't think it's the end of the world.

INTERVIEWER: So you served in the Department of Energy and worked in defense and you were head of the CIA. Is there anything about your years in public service that you want to talk about, or even the importance of public service?

DEUTCH: Well, I think it's the latter point which is pertinent for MIT's 150th anniversary. There's been a history of individuals at MIT spending time in Washington and contributing to Washington. I don't think everybody has to do it. I don't think everybody's really got the kind of background or interest in doing it, but for MIT to have some set of people who pay attention to Washington, not only to mouth the importance of universities and getting universities more money, but really trying to contribute to improving public decision making about important issues and allocation of resources. I think that's an important contribution for MIT to make.

So I'm proud of having done that, and as I say, it's got a tradition here. I mean, it goes back to Vannevar Bush, and it certainly involves Jerry Wiesner quite prominently, and Bob Siemens, who had a tremendously important and distinguished career in Washington as head of NASA and secretary of the Air Force and director of the Energy Research and Development administration. So there's a tradition there which I think is important and should be encouraged.

More broadly, I believe that it is a catastrophe that public decision making is in the hands of lawyers, or worse yet, business school people. Technologists should have a much greater role in that. But when they do that, they have to do that with an appreciation of the political and economic aspects of the subjects, not just technical aspects of subjects. It goes back to this question about how do you broaden that educational experience of the kids here and faculty? But I'm very proud of my commitment to government service. Sometimes I've been good at it. Sometimes I've been less good at it, but it's been a very big part of my life, big part of my life.

INTERVIEWER: So I understand the contribution that you feel academics can make to public service. Was there anything that you feel you got out of public service that made you a better person when you returned to academia?

DEUTCH: Better person?

INTERVIEWER: Better researcher, better teacher, better administrator, whatever.

DEUTCH: It is the fact that when you have high responsibility jobs, I mean, very high responsibility jobs in Washington, you see the world differently. Doesn't mean everybody sees it the same, but you do see it differently, and that is certainly -- I mean, I remember that when Jim Schlessinger was secretary of energy and asked me to be under secretary, he says, when you move to that level, you will see things differently. And that's certainly the case. But going even beyond that level, you'll learn more. So I think that the big effect on me has been the difference that you see things because you've had this responsibility. Maybe it makes a difference in me as a teacher. I'm not sure that it's easily transmitted or received by the students, but it certainly has given me a broader view of what public policy means at a university and how it should be approached.

INTERVIEWER: Can you talk a little bit more about that, about how your perspective changed based on how you --

DEUTCH: What do you mean, how my perspective changed?

INTERVIEWER: On the ways in which being in positions of responsibility changed your views when you got back or more about what you just said. What was different?

DEUTCH: Well, somebody says to you, climate change legislation and you immediately think about five or six different implications of that simultaneously and recognize, know what has to be done to make progress, and in this particular case, how hard it's going to be. And when you talked to an academic person who's not had that kind of high-level immersion in a problem like climate change, they're likely to look at it in a much more single lens, either an economic lens or modeling lens or something like that. That's an example. How you translate that into effectively teaching, I don't know. I'm not sure how important it is to teach all that right away, but it's not that easy to transmit.

In an average day or week, I will talk by phone to some other ex-cabinet officer somewhere in the world almost every day. Republican administration, Democratic administration. It is interesting, I find about the ability for that level of communication to go on and for people to want to have it so that you want to be able to talk to Bill Perry, or Harold Brown, or Brent Scowcroft, or someone like Jim Schlessinger about an issue because you know that you're going to have those variables more easily accessible than not.

INTERVIEWER: So it sounds like there's a kind of similarity of experience that comes from those high level--

DEUTCH: That's right. It's not an identical view on results or -- but it's certainly a similarity of experience.

INTERVIEWER: Sort of a recognition of the complexity of everything.

DEUTCH: Correct, correct.

INTERVIEWER: Right, which doesn't always exist in academia.

DEUTCH: Or anywhere else either. I mean, I'm not -- but I often say that leadership -- people who talk about leadership really are a mile short unless they've actually done it. You can't tell people how to be Napoleon. You either have been Napoleon and you can talk to other -- so I have some skepticism about that kind of stuff.

INTERVIEWER: Anything else you want to say about the years in public service?

DEUTCH: I don't think so.

INTERVIEWER: I'd like to talk a little bit more -- you talked some about the way students have changed --

DEUTCH: I will say one more thing about public service. I've twice served for different presidents on the President's Science Advisory Committee, big brouhaha committee. Once for President Reagan, who I -- for curious reasons, I got along with, and the other was for President Clinton in his second term after I returned to MIT.

And the thing which I found most startling and I keep on telling my friends is how much better President Reagan's White House was at appreciating science and technology issues than President Clinton's. You continually have these stereotype views of Republicans and Democrats and what they care about and don't care about, what they pay attention to. When you're actually there, sometimes it's quite different.

INTERVIEWER: That's interesting. So you talked a little bit about how the students have changed in the roughly 40 years since you came as a student. Are there ways in which the faculty has changed or the culture has changed?

DEUTCH: The faculty has changed. That's interesting. I would think -- I guess my guess is that I don't think the faculty has changed as much, correspondingly as much. They're still as dedicated to scholarship, dedicated to teaching, as they were when I arrived here. Better or worse, I don't know, but I wouldn't think that there's that much difference in the faculty as I described in the students.

INTERVIEWER: And that culture at all?

DEUTCH: I'm sure we're supposed to say isn't it great how much more diversity there is? How much more -- whatever we call it -- consensual decision making there is. And I guess that I like it better as a fact than as a slogan. I suspect that there will be kind of a backlash here, where the people who are being celebrated for being diverse are going to say, well, we're not really diverse. We're just like you guys.

I remember I once had a student. Her name was Barbara Yoon. She was about five foot, period and weighed about 98 pounds and was Korean, obviously, by her background. This is back in the 80s. She ended up wanting to work with me. That meant that students had to be pretty sturdy to say that they wanted me as an advisor. I tried to talk to her. I said, tell me about your Korean background.

She looks at me. She says, what Korean background? She said, well, my mother is a professor of medicine at UCLA and my father is a professor of mechanical engineering at UCLA. I grew up in Los Angeles. I don't know what you're talking about. And she was as indistinguishable from a UCLA coed as you could imagine, which is what she was. And that makes me happier and more pleased about America than it does to say, we need to have diverse -- it's kind of a wonderful homogenization that occurs here with becoming part of an American, but in any event, I think we probably overstate this diversity stuff now, but it's okay. That's the fashion and I'm happy to go with it.

INTERVIEWER: As you look to the future of MIT, are there hopes that you have for the way it will change or the role it will play or --

DEUTCH: No. I would say rather, I am completely confident that it will continue to -- I mean, I believe the record is very, very good. I mean, it's evolved with the times. It's always stayed up, made contributions. It's always done its educational job well. We may be fiddling around too much in international matters now, trying to say that we can help Singapore and Portugal and Abu Dhabi and the like, but I think we've done our job well and I don't see any reason to believe that we won't continue to do our job well. We have a great brand. We compete well. I'm pretty happy about it. This is not an institution which I think is in trouble or doesn't have a great future in front of it.

INTERVIEWER: When you're out in the world, how do you think people -- what do you normally hear when MIT comes up? How do you think it's viewed outside of this institution?

DEUTCH: Well, we know that people attribute to MIT a competence and a greatness which is even higher than what it actually is. So as I say, its brand is that it is the best technical school -- research, scientific and engineering research institution in the world. That's its brand. That's what people believe. That's what you hear when you're out there. It's even -- I even believe it more as I say it's true. I mean, they really believe it. I was in China twice this year with different groups and the adulation you get for MIT is really quite unreasonable, but we're happy to have it.

INTERVIEWER: It's like Harvard.

DEUTCH: No, no. It's different than Harvard. Harvard is treated more as a museum. I mean, we're treated more as a factory. It's different.

INTERVIEWER: If there were -- you've had the experience of being here off and on for a number of decades. Would you have any advice to offer to somebody who was just arriving?

DEUTCH: Yes, yes. Big strong advice. Don't get old. It's great to be here when you're an assistant professor. It's the best. I don't think that the young -- young faculty don't seem to me to be making bad choices and the students certainly don't seem to be doing badly, so --

INTERVIEWER: So outside of MIT, you also -- you served as a -- you have a number of other activities, the trustee for the Center for American Progress and involved with the MFA and Urban Institute. What is it about these other sorts of activities that you think is important?

DEUTCH: Well, in each case, there's a place where you can make a contribution and there's also an interest that you have. In the case of the Center for American Progress, John Podesta is the president of that, and he's a political friend of mine, and we deeply involve each other in political matters of all kinds. So we were very close in the Clinton administration. So that's very much of a personal relationship.

In the case of the Museum of Fine Arts, it's one of the great art museums of the world. My mother took me to art museums from the time I was five or maybe less, so I love that interaction and enjoy being able to help support an art museum.

The Urban Institute, I had a friend in government all the way back to the MacNamara years in the Pentagon who became president. I guess I actually did work for him when he was in the LBJ administration too. So I was a trustee there for 27 years. It was outrageous. But it's a great group of researchers who are trying to bring good analysis to public policy, social public policy problems. Each one has a different history with it. I'm now also trustee of Resources for the Future, which has to do with energy and analysis for supporting energy and environmental work. I enjoy that very much. That just seems to me to be part of your opportunities for helping not-for-profit organizations. Some people do hospitals. I do what I know best, which is organizations that have something to do with Washington or cultural organizations. I was a trustee of Wellesley for six years. I enjoyed that very much.

INTERVIEWER: So I think those are most of my questions. Is there anything we haven't covered that you think -- that you'd like to say? **DEUTCH:** It's up to you. You know what you're trying to cover.

INTERVIEWER: I'm primarily interested in opinions you have or thoughts you have about MIT. So is there anything you'd like to say that you haven't said?

DEUTCH: It's a great place. I'm glad to be here. I wish I could be here for -- when is the 150th? I guess I wish I would be here for its 200th. I probably will be here for its 150th, right?

INTERVIEWER: Yeah. I think it's next year.

DEUTCH: Right, right. Well, thank you very much.

INTERVIEWER: Okay. I think that we're done then.