

**Interviews of the Margaret MacVicar Memorial AMITA Oral History Project, MC 356**  
Massachusetts Institute of Technology, Institute Archives and Special Collections

**Sara Murphy** – class of 1968

Interviewed by Emma Bernstein, class of 2020

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## Margaret MacVicar Memorial AMITA Oral History Project

Sara Murphy [SB, SM Electrical Engineering, 1968] was interviewed by Emma Bernstein [SB Computer Science and Molecular Biology, 2020] on June 30th, 2018 at her home in Hollis, New Hampshire. During her time at MIT, Murphy studied Electrical Engineering, was active in McCormick Hall government and married her husband, Dan Murphy. After completing her 6-A M.Eng., Murphy began her career working for Cambridge- and Boston-based startups. During her 39 years with Digital Equipment Corporation, Murphy made significant contributions to compiler technologies, which she discusses here. A mother to one son and grandmother to two grandsons, she is currently enjoying her retirement.

BERNSTEIN: Let's start with where you grew up and what your childhood was like.

MURPHY: My young childhood was in Brookline, Massachusetts. I'm Jewish by background, despite my last name. Brookline in the 1950s was largely Jewish and a very education-focused town.

We lived there until I finished the sixth grade. My parents were very focused on education. I'm the eldest of three, and I was always encouraged to do well in school, always, always to try to be the best, and I did. I just naturally gravitated toward schoolwork. I did well across the board in school and was typically at the top of my classes.

We moved to Florida when I was in the seventh grade, and I went for one year to a large regional school in rural Florida that was junior high and high school combined. That was a totally different culture from what I grew up in, as different as you can imagine, which was I think good for me in terms of life perspective, because I was around very different kinds of people. But it wasn't good for me as an adolescent, age 12. It was definitely a football player cheerleader kind of culture. Being 12 years old, I tried my best to fit in, with mixed success. Also, there was a lot of latent anti-Semitism. I went from living in a place that was all Jewish to a school where in the whole junior/senior high school there was only one other Jewish child.

It was also very racist. It was after *Brown versus Board of Education*, but the black students were still segregated off in what were called 'the colored schools.' Even the water fountains were labeled by race. So it was culturally so different. And my parents were uneasy about my being in school there. My father's job worked out that he transferred back, and when we came back to New England, we moved to Framingham [Massachusetts, a Boston suburb]. We

lived in Framingham through my high school years. That was not the same culture as Brookline, but much more similar than Florida had been.

I don't know how much you want me to go into the background of my parents. My mother was a second-generation American. Each of my mother's parents had been immigrants, her mother at age 14 and her father as a young man. My grandparents on my mother's side still spoke with an accent. My father's family had been in the U.S. a generation earlier. They'd come in the 1880s. Both sides of the family were Jewish. My parents met at Temple Israel in Boston.

BERNSTEIN: You mentioned your dad went to Harvard.

MURPHY: Yes.

BERNSTEIN: Is that why you were originally in Cambridge?

MURPHY: Both of my parents grew up in Boston. My father grew up in Roxbury and had gone to Roxbury Latin School, which is a private school in Boston and a very, very highly rated private school in terms of academic standards. They had a program—it was an all-boys school—for boys who lived in the neighborhood who wouldn't have been able to afford private school. My father was very bright, and he went there. And almost everybody from Roxbury Latin School went to Harvard.

BERNSTEIN: Wow.

MURPHY: It was one of these prep schools that sent people to Harvard.

My mother grew up in Dorchester, and she went to Girls' Latin School. You may have heard of Boston Latin school, a public exam high school that has competitive admissions. In those days Boston Latin was only for boys, and Girls' Latin was the equivalent public exam high school for girls. After Girls' Latin School, she went to what was then called Boston State Teachers College, which later became UMass Boston.

In the late 1930s, there was a lot of anti-Semitism at Harvard when my father was there. He often talked about that when I was growing up. Harvard limited how many Jewish students they would admit. He was a Jewish commuter at Harvard. And it was something that was always in my consciousness, as was the Holocaust-- I was growing up in the years not that long after the Holocaust.

BERNSTEIN: Why did you take interest in the sciences?

MURPHY: I was interested in everything academic. I was interested in history—I was very interested in history. I was interested in history and philosophy and literature. And I was also very interested in the sciences. I just was very-- Things got my curiosity.

I was curious about computers from when the Univac computers were predicting the election results in the 1950s. And I said, “How could you make a computer that can predict how an election is going to go?” So when I was in the eighth grade, I did a science fair project on computers and learned about AND gates and OR gates and how you put them together to make an adder. I was so excited about that.

And then when I was in high school, I always did projects for the science fairs and math fairs, and I became curious about non-Euclidean geometry. It was probably my sophomore year in high school that I did a math fair project on non-Euclidean geometry. It fascinated me that if you change the basic hypotheses, everything changes, and that you can change the hypotheses and then prove a whole different world. I was fortunate I had good math teachers in high school, and I had a teacher who gave me a book on non-Euclidean geometry to read. That project won first prize for the state of Massachusetts.

BERNSTEIN: Wow.

MURPHY: I won for my school, and then went on to a regional competition and then to a state-wide competition. I'm sure I was very enthusiastic. I had all my proofs. “And if you just change this hypothesis, look how everything changes.” And so I wound up winning for the state.

I loved physics in high school, though I did not like labs. I didn't like labs in high school. I didn't like labs in college. Working in a lab and putting things together with my hands never has been for me. But the theory of how things operate always fascinated me. I loved high school physics. I loved math. And I was interested in other things, such as history, too.

My father worked for MITRE. I don't know if you're familiar. MITRE is a sort of private, public research consortium in Bedford, Mass. It's still there. My father wasn't a researcher; he was in a business/finance capacity there. I turned 16 in the summer of 1963. Because I had won the math fair, my father was able to get me a summer job [at MITRE]. I started there on my 16th birthday. When I first went for the interview, I didn't tell them I wasn't going to be 16 at the beginning of the summer, because I knew that I couldn't work legally until I was 16. So it

was the day of my 16th birthday, which is the 15th of July, that I started to work there.

I had done the computer science fair projects, and this was very early days of computers. MITRE had an IBM Stretch computer and they gave me books about programming. And I wrote a little bit of code. I mostly did various kinds of clerical tasks. They always had umpteen things that needed doing. And I was so eager that I would do anything. I enjoyed that job enormously.

My father drove me. I just went in the morning with my father and went off to the group that I worked in. It's a pretty big complex. That was the summer before I went into my junior year in high school.

And then I went back to high school. And after working at MITRE that summer, it was like going back to high school just seemed like kind of, "Oh, I have to go back to high school."

I went to MIT after my junior year in high school. In those days, they had just begun having advanced classes and AP classes. I had been taking accelerated classes in high school, and at the end of my junior year, I had finished the high school requirements. I would have been taking AP classes my senior year. College applications would have been in the fall. My parents encouraged me to see if I could go to college a year early since I had already finished the high school requirements. I could have taken AP classes at high school, but I liked the idea of going to college that year instead. The only colleges I really knew about were the ones in Boston, and so I applied to Harvard and MIT. (Actually, it was Radcliffe, the women's college associated with Harvard, then.) And as I said earlier, I got into MIT.

I had visited MIT, and I was very excited about MIT. McCormick Hall had opened that fall when I went for the visit. I took a campus tour, and I spent a day there with a woman student. I didn't stay overnight—I must have taken the T in or something. I got there first thing in the morning and went to classes with her.

BERNSTEIN: Wow.

MURPHY: MIT was such an exciting place. When I was admitted, I was just totally thrilled.

A neighbor of ours in Framingham knew Marvin Minsky [Professor Emeritus and leader in the field of Artificial Intelligence; co-founder of MIT's Artificial Intelligence Lab (now CSAIL); a founding member of MIT's Media Lab], who was

one of the founders of artificial intelligence. Marvin Minsky had an artificial intelligence lab in Technology Square.

After I had been admitted to MIT, but before my freshman year at MIT, our neighbor got me an interview with Marvin Minsky. Marvin was your absent-minded professor, brilliant man. But [he said], “Oh, yeah, there's this eager beaver girl who's coming in to be a freshman next year? Sure, we'll hire her.”

I got rides into Cambridge with our neighbor, and I worked at the MIT AI Lab that summer before my freshman year. I was still 16 when I started that job. I turned 17 the middle of that summer. I think back, and I was so young. I was really young. That's when I first really learned to write computer software. The MIT AI Lab was the world's greatest. ‘Hacker’ was a really positive term in those days. The ultimate hackers on the planet worked at the MIT AI Labs, and some of them were MIT students. They gave me access to a PDP-1. The PDP-1 was a computer that DEC [Digital Equipment Corporation] manufactured—its very first computer. The nice thing about a PDP-1 is you had use of the whole computer. It was the first of the minicomputers. You didn't have to take punch cards to give to an operator off in another room: you actually sat at the console of the computer. You signed up for your time and sat at the console and used the computer. I learned how to write code on the DEC PDP-1. And I worked there that summer. Then I worked there part-time during my freshman year.

Once school started, MIT freshman year was really intense. In those days, all of the freshmen took the same courses. Everybody took calculus, everybody took physics, and everybody took chemistry. Some people advanced placed calculus. But I hadn't had any calculus because I came from my junior year.

I gather biology is a more recent requirement; it wasn't a requirement then. There were calculus, physics and chemistry. And every Friday morning, there was what they called a quiz. But these were long quizzes! It was all Friday morning, in Walker Memorial. And it rotated among those three. So you had calculus quiz one week, and chemistry the next, and physics the next, and calculus the next. And it was intense.

I had a mindset that I just had to do well in whatever I did. So I studied all the time, especially my freshman year. It was “There's the quiz that's going to be this week. I've got to do this.” And when the break came between the two semesters, it was like [SIGHS] “Oh, god.”

But I did well enough. I got B's. They didn't have pass-fail then. That came later. And talking now to some of the other women in my class, despite my sense that

I was working so hard, other people were struggling more than I was. I was in my own little world of just trying to do it.

And looking back, two of the women on my hall tried to commit suicide. They'd slit their wrists in the bathroom in McCormick Hall. So there was more pressure than there should have been. And I kind of blipped past that. I mean I couldn't believe it, because they were people that I thought did really well and were delightful people. But it was more of a pressure cooker than it should have been, than was useful.

What else can I say? Late in my freshman year was when I met my husband [Daniel Murphy '65], who I've been married to for over 50 years. He was a senior when I was a freshman. He was doing some projects at the MIT AI Lab on the same computer that I was. It was late in the school year that he and I started dating. And then he graduated. When we had a date, I always had to have a study date, though, because I always had to study—which was good for him. That helped him get through some of his last courses, because we studied so much.

BERNSTEIN: I've heard a couple of other alumnae talk about how they would have kind of group meetings at the Cheney Room before the Friday quizzes. No?

MURPHY: I don't remember those. I simply don't. Maybe those were in a different era.

BERNSTEIN: That could have been it. Did you spend a lot of time in the Cheney Room?

MURPHY: No. I really didn't. I lived in McCormick Hall. And there were study rooms, and everything was very self-contained in McCormick Hall. I think the Cheney Room had been really valuable for women earlier before McCormick Hall existed. And I knew that some of the coeds who were older or had been there longer would use the Cheney Room. But I didn't, at least not as I can remember.

And I got married between my junior and senior years. So at that point, I was living off-campus my senior year and then my graduate year. I did the five-year master's program. I was living off-campus. So I may have used the Cheney Room a little bit, but not that much.

BERNSTEIN: I was just wondering.

MURPHY: As an undergraduate, I'd go into a big lecture, and if there was another woman there, I'd tend to sit with her. It was a friendly face. We knew each other.

My roommate, my freshman roommate [Sherry Gulmon '69, SB Biology/Life Science], I talk to her now, even. We've stayed in touch. She lives in Palo Alto. We talk about once a year and have a long conversation. It came much easier to her. At 11 o'clock at night, she'd say, "OK, I'm going to sleep." And I would go up-- There were study rooms on the top floor of McCormick, and I'd go.

Do you live in McCormick?

BERNSTEIN: No. But I've been to them. They're so nice. My floor actually rented one out the last week of school so that we could have a party there because it's so pretty.

MURPHY: Yes it is. It was lovely up there. The dorm was so luxurious compared to the other dorms.

BERNSTEIN: It still is.

MURPHY: Well, that was Mrs. McCormick [graduated from MIT in 1904, founder of McCormick Hall, and responsible for funding much of the research leading to the development of the first birth control pill]. She wanted to take good care of the women. So Sherry would say, "You don't have to study anymore. I need to have my rest before the exam." And so she'd go to sleep. And I'd go up and study.

BERNSTEIN: Do you remember how many women were in your class?

MURPHY: In the class as a whole, 45.

BERNSTEIN: And then when you started taking computer science classes?

MURPHY: Well, computer science didn't exist as a discipline. I had learned to program. And so the courses that existed: There was an introduction to programming, which I didn't need to take because I'd learned that already. And then there was a course that I did take on systems, computer software systems. It's funny. I remember the course numbers. It was 6.251. But what the title was? I have old catalogues upstairs. I can look it up. I honestly don't remember how many women took it that term. A couple of us, probably. To kind of circle back, you were asking about computer science classes. Majoring in computer science wasn't a possibility then.

BERNSTEIN: So what did you major in?

MURPHY: Well, I wound up in electrical engineering. Initially, I really wanted to major in physics. I really wanted to be a theoretical physicist. Freshman year, I had a recitation section instructor who was one of the eminent physicists. I don't know if you've heard of Philip Morrison [astrophysicist and Professor Emeritus; member of the Manhattan Project who later advocated against nuclear proliferation].

BERNSTEIN: The Manhattan Project?

MURPHY: Yes. We had our little group of 20 people in his class. And the man was—very brilliant people can take complicated things and make them clear and simple. And he had that talent. I just found it so-- I found special relativity so fascinating, and so I wanted to be a theoretical physicist.

In those days, you picked your major at the end of the freshman year, and I majored in physics through my sophomore and into the middle of my junior years. I also took-- As a physics major, you had to take some electrical engineering, and I chose to take the electrical engineering for electrical engineering majors because Amar Bose [MIT Professor of Electrical Engineering; research interest in acoustics; founder of the Bose Corporation] taught it. And then Paul Gray [MIT Professor of Electrical Engineering; focus was on semiconductor electronics and circuit theory; later became President of MIT and Chairman of the MIT Corporation] taught the second part of it, and both of them were superb.

The electrical engineering classes came easy to me. It was a lot of math. So I was taking electrical engineering. And I had various jobs programming computers. In my junior year, I kind of hit the wall with theoretical physics. Quantum mechanics—I couldn't get it. I just couldn't get it.

I was having a hard time that term anyway. And so after that term, I switched to-- Electrical was the easy choice. At that point, I think one of the reasons I gave up on the physics was because I had a sense I'd never get a job as a pure theoretical physicist. I just didn't have the ability to do that, which maybe I gave up too easily. I'll never know.

But the computer jobs were there. In those days, it was the beginning. It was so easy to get a job, and to get an electrical engineering degree would give me a good path. The other thing was in electrical engineering, they had the co-op program. Do they still have that?

BERNSTEIN: Yes.

MURPHY: So I did course 6A. I transferred into it in the middle of my junior year. But I had already taken all the electrical engineering requirements by then. And my co-op assignment was at the Air Force Cambridge Research Labs, which was very convenient.

My parents lived in Framingham, and there were several semesters where I worked at AFCRL. They paid me to do my master's thesis. It was really-- Again, I just had some really good luck. I could live with my parents in Framingham and commute to AFCRL easily enough.

And then Dan and I got married at the end of the summer before my senior year. And we were living in Arlington. And again, commuting both to MIT and to AFCRL was no problem.

BERNSTEIN: Was it common for women in your class to get married while they were at school?

MURPHY: It was. There were so few of us that--

BERNSTEIN: Hot commodity?

MURPHY: Yes. Well, it might be embarrassing to say, but that was one of the fun things. Well, in high school, I was kind of geeky and not one of the popular girls or whatever. In college—

[LAUGHTER]

[At MIT], all of the women had more dates than we could-- And a lot of the women got married. In those days, well, the culture was changing around sexuality then, and so Dan and I became sexually active very early. But it still was sort of you were supposed to get married. So I lived in McCormick freshman year and sophomore year. And then when I was a junior, the one tower of McCormick had filled up and they were starting to build the second tower. And they offered women students—I'm not sure whether you had to, I think maybe you had to be a junior—the chance to have apartments in Westgate. And my freshman roommate Sherry and I took an apartment in Westgate the junior year.

But the truth was I was at Dan's apartment in Arlington most of the time, and commuting in, and trying to sort of hide things from my mother, who didn't want to know. So I think that's why so many of us got married early, though,

was we were getting into relationships. In those days, it was kind of secretive to be in a relationship with somebody and staying together and living together if we weren't married. So we got married that summer. We had a big wedding. My parents were relieved that I was getting married.

In answer to your question: of the women in my class, I don't know how many of the women in my class got married before we graduated. I can think of one or two, of a couple. And then a lot of the women in my class got married, boom, at graduation time.

But being married and not being married wasn't that different other than getting along with my parents—well, and not having to pay for a dorm room that I barely ever went to. After we got married, I continued to go to school. And then I just started working. Well, no, let me back off a little bit, because I finished the five years, and I was getting the master's degree.

I thought, “Well, of course, I'm going to get a PhD, a doctorate, either a PhD or an ScD.” And I took the written exam. Those days, you took a written exam. I finished the master's, I'd done all the coursework for the doctorate. And the thing that I needed to do was a major piece of research for a thesis. I passed the written exams no problem, but I had to take an oral exam. And I got very nervous. That oral exam—there were maybe four or five faculty members questioning me.

One of them was really arrogant. He sat there with his feet on the desk. He was somebody I hadn't known before, and he totally intimidated me. I got pretty nervous, and things that I knew, I just couldn't articulate. They didn't fail me on it; they said I was going to need to take it again after a period of time.

That summer [the summer of 1969], I was working at Project MAC, not at the AI Lab, but in a job with my faculty advisor, and I was kind of unsure about my path. I really thought that I was coming back to class in September. But my advisor had started a little company and recruited me to come work there.

And it just seemed like the easiest thing in the world to go to work for that little company, which was on Vassar Street. It was very close to MIT. It was all MIT people. And then that company folded about a year and a half later. And one of the people that I had been working with there had gone to DEC and recruited me to come to DEC. I started working at DEC in August 1970.

I'd been thinking I'd go back and get the doctorate, but I never did. I went to DEC. And there were always jobs to do and interesting things to do. And life

went by. And then, after a few years, I realized that if I was going to have children, maybe this was the time. And that's when I got pregnant with my son Jordan—which, again, was an, “OK, I guess it's time to have a child.” And we decided. And fortunately, I got pregnant right away so we didn't have to think about it very long. And then it took me by surprise how much it changed my life. It really made a huge difference.

My son Jordan was born in 1974. There was no such thing as maternity leave in those days. I worked until the day that I went into labor. When I first brought my son home from the hospital, I worked from home. I had a video terminal at home and dialed in from home to a multi-user system that my project team used. I started going back into the office regularly when my son was five months old. I worked part-time, 20 hours a week for his first year or so and then 30 hours a week for a number of years. I kept on working for DEC through those years and went back to full time when Jordan was in the second grade. I was very fortunate that I had supportive managers in those years. Working from home as I did was very unusual then, as was working part-time.

I never had a second child. Dan and I discussed the possibility of a second child for years. I never felt like I could juggle giving enough attention to my son and yet another child and my job. It would've been too much. And I couldn't imagine cutting back on working. It just, how can I say it? It would have been giving up too much of being myself.

When my son was little, daycare was complicated. Childcare was complicated in the '70s. Not that many women were working full-time in the '70s—or not that many mothers, I should say, were working. And so I really juggled. For the first few years, we had college students who came into our house to help. We also were fortunate to have help from my parents—Dan and I moved to Framingham, where they lived, shortly after Jordan was born.

And then when Jordan got old enough to go to a nursery school-level daycare, that was a relief. There was a co-operative daycare center in Framingham, the Framingham Children's Center, that was run by the parents and had hired teachers. But the parents ran the Children's Center. And the Children's Center got into trouble when Jordan was four or five years old. And I was worried enough about it that I took the reins as the president of the Children's Center. I put a lot of energy into making sure it was a good place, because for myself, that was so important to me.

**BERNSTEIN:** Did you have to take time off of work to do that?

MURPHY: No, I didn't. We had evening Board meetings because the parents all worked, and I had enough flexibility in my schedule. I was only working 30 hours a week then. I didn't go back to full-time until Jordan was in second grade.

But it was also the case that full-time was much more than a 40-hour week. The early days before I got pregnant, I'd work until 10 o'clock at night, 11 o'clock at night. Dan worked those kind of hours. In those days, he worked for Bolt, Beranek and Newman [a technology research and development company based in Cambridge], and we just worked all the time.

I did get involved in community theater. Dan and I both did. So when I was doing a community theater show, I had to take some evenings off. And in those days, computer people worked crazy hours. Maybe they still do. But that was just in the culture.

DEC was a really vibrant place in the '70s. It was almost all MIT people, lots of MIT people. The industry was just beginning, and I really loved it. In those early days, there wasn't a lot of prejudice against women, because people who could do the work were a valuable, rare enough commodity that they needed us.

In those years, I worked with another woman who is a friend to this day [Norma Abel]. She came in, was it '71, '72, something like that? And we worked together on various projects. And then she became a manager. She was our team lead when Jordan was born – and very supportive of my being able to work while raising a child.

BERNSTEIN: Did you notice the culture regarding women change throughout your career?

MURPHY: Well, what I experienced, as I think back, in the technical areas, it stayed friendly. But maybe what changed was the kinds of jobs that I did. Because it's funny: I say one thing, and then I think about it.

My first assignment at DEC was in a group that did specialized systems and software that were kind of one-offs on contract. And there was some prejudice back then that I ran into, particularly when I was out dealing with customers. It was less prejudice and more flirtatiousness that could get pushy. But I managed to duck it. And I was married, so I had my wedding ring to flash as well. But there were times when, as a woman, I wouldn't feel heard. It got better when I left that group to work on compilers, which had been an area of mine before I went to DEC. At DEC, I worked on one of the very early optimizing FORTRAN compilers. And it wound up being a project of three of us, and two of us were women. One is the other woman I mentioned [Norma].

I did the code generation and Norma did the global optimization. And a man named Frank Infante did the front end of the compiler. The three of us were a strong team. And Norma and I, as I said, became lifelong friends.

We worked all sorts of crazy hours. We had a roomful of Teletypes—at that point, we were using time-sharing systems. All of us would be in the Teletype room eating pizza at 10 o'clock at night.

BERNSTEIN: Did you have childcare then?

MURPHY: That was before I got pregnant.

BERNSTEIN: OK. I see.

MURPHY: That was before I got pregnant. My life changed after Jordan was born. I started working less hours, obviously. I didn't try to work those kind of hours after Jordan was born. So that was a very significant change in my life. Getting married didn't change my life particularly at all, but having a child changed my life a lot. And I'm really glad that I ... because my son and my grandchildren are a major, major piece of my life today.

So where was I? Back in DEC, DEC was in an old mill. And it was so grungy. It was really amazing. But that was part of the culture. The people who worked there back then, it had been an old woolen mill. The floors were at an angle, and so your desk chair would roll. There was one corridor where they had an air conditioner on one side of the corridor cooling the offices, pumping hot air into the hall, and then another air conditioner on the other side of the hall sending the hot air to the outside.

So the timing of things, there was a point when I realized I was pretty much working full-time anyway. That was when Jordan was in the second grade. And by then, there was an afterschool program. We lived in Framingham then. And there was an afterschool program that Jordan attended, although he didn't like it very much. He would rather go home. And he was still pretty young—first, second grade. And so there were always challenges.

BERNSTEIN: Do you mind if I ask you a few more questions--

MURPHY: Oh, please do.

BERNSTEIN: --about MIT? First, what kind of extracurriculars were you involved in while you were at MIT?

MURPHY: Well I was active in McCormick Hall, and I was on the McCormick Hall Board. Other than that, not really. I was so focused on studying and working part-time, and then later being with Dan that I did not get involved in extracurricular activities, sadly. It's unfortunate, but I didn't. Just being there and connecting with people there took all my energy.

BERNSTEIN: Were you at all involved in Hillel?

MURPHY: I was not. At least in those days, Hillel was very focused on students who kept kosher, and I didn't come from a kosher background. The beginning of my freshman year, my parents took me to Hillel, but I didn't get involved.

BERNSTEIN: What kind of issues did you consider as VP of McCormick Hall?

MURPHY: There were social events to plan. And there were questions about various rules, such as whether men could come upstairs. But Mrs. McCormick, you see, was still alive and she was very puritanical about that sort of thing. I'm trying to remember. There was questions of-- We had a judicial—JudCom, it was called—committee. We discussed who are the right people to serve on JudCom? I remember that being a contentious conversation. I can't remember a lot of the issues, other than those two.

BERNSTEIN: So with the men coming upstairs, did the students--?

MURPHY: Oh, whether a student would be allowed to have a date come up—it's fuzzy in my mind now. I think by the time that I left, we could, but I just don't remember. I know we had meetings and we were planning--

BERNSTEIN: Did you have dances?

MURPHY: I remember a big party we had in McCormick—I don't think it was a dance. And I remember we organized a boat trip. We organized a boat trip out to one of the Harbor Islands and arranged a fun day.

BERNSTEIN: Did you know most of the women who lived in McCormick?

MURPHY: Yes, particularly the women in my class. We were only 45 and so we knew each other. And we all ate in the McCormick dining room. Our meal plan was three meals a day in McCormick dining room. I'd go into the dining room and look for

people to sit with at meals, and so we got to know each other pretty well. And seeing these women now [at my 50<sup>th</sup> class reunion this week], many of them I hadn't seen in over 50 years. That was fun.

BERNSTEIN: And the 6A program, how well did you think that that prepared you for your career at Digital?

MURPHY: I thought very well. I had the experience of working at AFCRL. And it wasn't precisely the same technical work that I did in my subsequent jobs, but I'd worked in a technical group with a group of engineers and researchers that was culturally very similar to what I found at DEC, and at the little company before as well. Yes.

BERNSTEIN: Awesome. OK, so can we pivot back to your career?

MURPHY: OK.

BERNSTEIN: So you worked at Digital, and so what was the big trajectory?

MURPHY: I worked at Digital and after that first year when I was in that special systems group, I worked on compilers. And I worked on different compilers, and those were the years when my son was born. In my early years at DEC I focused on technical work and moving up the technical career path. DEC in those days had separate "ladders" for technical jobs and for management jobs. I had a boss who wanted me to be a manager. And in those days I didn't want to be a manager; I wanted to be a technical person. But he talked me into it, and I found I liked being a manager.

Jordan was moving through grade school. I had more time and I could work longer hours again, although I never went back to working nights like I had before Jordan was born. I moved into management jobs, and at the same time I was on the technical career ladder. At DEC in those days, the technical ladder included a higher-level title that they called "consulting software engineer," which was a corporate-board-approved position. And I got the consulting engineer title—I'm trying to think—would have been in probably the early 80s.

From 1971 until 1986, I worked in the organization that developed DEC's 36-bit line of computers—the DECSYSTEM-10 and DECsystem-20. As I mentioned earlier, I was part of a three-person team that developed the Fortran compiler for that line. After that, in the late 1970s and early 1980s, I worked on compilers for other languages for the 36-bit line, and then managed the software

development group responsible for all of the compilers and development tools for DEC's 36-bit computers.

In the mid-1980's, DEC cancelled the 36-bit line of computers. In 1986, I moved to New Hampshire and into the organization responsible for compilers and development tools for DEC's 32-bit computers. By that time, DEC was focused on VAX/VMS, which was a very successful 32-bit system. I was thrilled to be asked to manage the group responsible for DEC's VAX Ada compiler, which already had the reputation as one of the finest compilers in the industry.

As I moved into management, I straddled the management and technical paths for many years. I kept the Consulting Engineer title, and held management positions at the same time—I was a project lead, and then a supervisor, and a manager, and a senior manager.

In the mid-1990s I left the technical career path, and eventually became Director of Engineering for Commercial Software Products. In that role, I managed a geographically-distributed organization of about 150 engineers at different locations around the U.S., England, Switzerland and India.

But other things were happening in those years. Compaq acquired DEC. Earlier today, I checked to see what the dates were. Compaq acquired DEC in 1998. And then Hewlett Packard acquired Compaq in early 2002. And the areas I was working in were shrinking, and engineering was shrinking. And well, layoffs had started earlier. I can remember vividly when layoffs got very bad, which was early in the 90s, because my husband was laid off. And there were ups and downs, but more and more, being a manager was a very different kind of job.

When I first became a manager, what I loved was seeing people's strengths, and different people are good at different things, and who would be good in this job, and putting together teams, and building teams. And I had some really high-performance teams in those years. And later, it turned into deciding who got laid off, and it was not fun. It was really not fun. So there was a point when we were doing significant cutbacks, and I could have just stayed leading a much smaller group, or I could decide it was time for me to do something else. I was fortunate that I worked for a boss who let me put myself on the layoff list, but look around in the company at the same time. That was in late 2000.

I moved into a position that was considered technology marketing, where I wasn't managing people anymore. I was going out and talking about products and technology to mostly very technical customers. And that's what I did the last years of my career. That would have been from late 2000 until 2009, when I

was laid off myself. And at that point I was 62, and we were in a recession, and the job market was terrible.

The other thing that was going on was that my mother had gone downhill. I started putting a lot of energy into being with my mother as early as 2004. She was in South Carolina, but I had a job where I traveled, and I could easily work remotely for a week at a time in South Carolina. Every month I would spend a week in South Carolina. When I was laid off, my mother was in hospice care at that point. I sort of looked for a job, but I also really didn't really want to start a new job. Then my mother actually lingered for more than a year, year and a half. After she died, I thought about going back to work. Fortunately, I really didn't need the money at that point. I never went back to work.

I envy people who could phase out of their careers at their own pace. The industry and the paths of things—it just didn't happen that way for me. I have a good life, and I'm happy with my life. I really don't have reason to complain. Yet I envy the people who said, “OK, now it's time for me to make the change.” I didn't get that choice.

I wasn't especially surprised when I was laid off because the company was cutting back like crazy. And my responsibilities were in an area that wasn't funded by my own group. As a former manager, I was well aware of the dynamic that managers were given a certain number of people we had to let go. And I'd be sort of an obvious one to let go, given what I was doing. My work may have been important for the company, but wasn't important for my boss, who had to get by with fewer people.

And I was already just turning 62, so I was older. And the high-tech world is not kind to older people. I don't know how much you're aware of that, but it's just, culturally, when they're looking for people to hire, they want to hire young people. When I was first laid off, I networked with a lot with people I knew who worked at various companies. But I recall that I never actually went out on an interview, even. I had a couple of phone interviews. My heart wasn't in it. My heart wasn't in it.

**BERNSTEIN:** What are you doing during retirement?

**MURPHY:** What do I do during retirement? I used to wonder what would I do every day. I'm involved in two different volunteer organizations. I'm active in a very small synagogue here in New Hampshire. We bring in student rabbis, and every year or two, we're hiring somebody. I head the committee that does the interviewing and selecting and recruiting—it's not just us selecting, but recruiting to get

them. And I really enjoy that. That reminds me of the years when I was a manager and was bringing in good people, which I always loved doing.

And I'm active in my synagogue in a number of other ways. I've been on the board forever. I was on the board back when I was working, as well. The Jewish Federation of New Hampshire gave me an award a couple years back they call a Shem Tov Award—Shem Tov in Hebrew is 'of a good name'—for volunteer work.

I'm also active in an organization called the Human Awareness Institute, which does workshops in personal growth and personal connection. It's called HAI for short. I got involved with them back in the early 90s, when our marriage was in kind of tough shape. Dan and I did workshops with them that were really valuable for our connection with each other and with ourselves. Up until then, I had been very technology-focused: Get the job done. There was motherhood, but it was all 'do a perfect job of everything and drive, drive, drive.' My work with HAI was very valuable for all the parts of me around my emotions and connecting with other people. Over my lifetime I've done a lot of volunteer work for them, and I still do that.

I'll be 71 in a couple of weeks, so I need to exercise regularly, and I read more news than I should. I really read more news than I should because, at least right now, it's not good for my state of mind.

And well, my grandsons were growing up. Circling back again, when I retired in 2009, my grandsons, Gabriel and Jacob, were still in junior high school, and they lived nearby in Nashua. And I did a lot of giving them rides and being involved in their lives. That was a huge gift. That was really a huge gift to me to be able to spend time with them. It was wonderful, those years before they each got their driver's license. Chauffeuring them, I got to talk to them and I got to be close to them. My younger grandson, Jacob, is living with us for the summer, this summer. He's just finished his freshman year at UMass.

Dan and I don't do a lot of foreign travel. I did a lot of that myself when I was working. I travelled all over the world. Nowadays, Dan and I go to pleasant places pretty frequently. In the summer, we love it here in New Hampshire. We'd be sitting out on our porch right now if it wasn't such a sticky day today. We eat our dinners out there every day in the summer. But as the cold weather comes on, Dan and I go South. We don't have any one place we go. We go to Florida. We go to South Carolina. We go to the Florida Keys. But we try in the wintertime to get away every month or so, which makes making a real commitment to anything kind of hard because we're not here. And we enjoy it.

We like to be places. We like to ride our bikes. We like to be places where we can bicycle. We like to swim.

So it's a very laid-back life. It's very different from the intensity of all the years that came before. Really up until the point that I was laid off, I was working very, very hard at my job and in those last years, too. And juggling that with being there for my mother--

BERNSTEIN: We've made it to present day, it seems.

MURPHY: I have indeed, and I enjoy my life. There's always something. I don't know if I'm going to get more politically active or not. I donate money, and sometimes I go to vigils, or marches, or whatever because I'm not happy about what's going on now at all. Well, I won't go there.

BERNSTEIN: I was wondering what your favorite book was, because you mentioned you like to read so much.

MURPHY: I read a lot. My favorite book is whatever I'm reading that day. I do read a fair amount every day. Right now, I really like reading biographies and history, and so on. So I'm right now in a biography of Ulysses Grant, who was not considered a great man of history. But this particular biographer, Ron Chernow, he's the one who wrote Hamilton-- So you're familiar with him. Are you familiar with the book about Grant? It's kind of a revisionist view of Grant, and of particularly what he did for ending slavery and for black rights. And the man was an alcoholic. He had struggled with alcohol all his life, and he also did a lot of good in the world. So that's what I'm reading now.

The book I read previously was a biography of Leonardo da Vinci by Walter Isaacson. Leonardo was a fascinating person. So there isn't one book or one author. There are a number of historians that I really like. And then I'll start reading fiction again. Isabel Allende writes wonderful fiction. And then I read stuff that's totally, totally light. I got a Kindle early on at the beginning of Kindle. I was going to see my mother. I was on airplanes a lot then, and I'd always have a stack of books with me. I loved that Kindle provided one little device that I could put my books on. I'm not usually that much of an early adopter but-- And it means that I can keep buying books.

BERNSTEIN: You don't need anymore shelf space. You don't need to add shelves.

MURPHY: Well, I'd be embarrassed to show you my study because I used to just buy paperbacks and it's-- The level of chaos up there is-- I don't have the several

hundred books I have on Kindle. If you added those to what's up in my study, it would be-- It was a good thing that Kindle came along.

I have old friends that I get together with. That's also important. Well, sadly and unfortunately, sometimes people my age are dying, which is very sad. Up until about a year ago, almost every day I went out with one of my neighbors. We'd walk, and we'd walk for a couple hours every day. We got to know each other so well because we'd walk and we'd talk. She died of cancer a little over a year ago, which was a huge loss. And I'm finding I'm not going out to walk as much since she's gone. But I do time on the treadmill and time on the bike every day. Every day I exercise. I need the exercise.

As I say, I read too many newspapers. Some of them I read online, and I read The New York Times and the Washington Post online. And then there's some that I get, the Wall Street Journal and the Boston Globe. So all of a sudden it's late in the day and I've gone, "Oh, time to figure out what we're doing for dinner," because we usually have pretty nice dinners. Dan and I sit down. We have a nice meal. With our grandson Jacob living with us this summer, he has dinner with us three or four nights a week, which is really nice. Really nice to have him with us.

BERNSTEIN: So is there anything that you think we missed from your MIT career?

MURPHY: Let's see. Funny story. My freshman year, as I said, I was intense. But October—I don't know if they still have this week where there's a freshman-sophomore rivalry. And my roommate, Sherry, and I had one of the corner rooms in McCormick. If you know the layout of McCormick, there are singles in the old tower, and there are big corner doubles, and then they made those into triples later. But our room was a double in those days.

We never locked our door. We came back and our room had been stuffed with newspapers, like open the door and behind it was a wall of newspaper. It was really a mess. And both of us, we kind of threw some out, pushed some aside, and left this mess in the room. Find the way to the desk and the books I needed and dig out the bed. Finally the student who was president of McCormick in those days, the faculty advisor must have come and said, "This is a fire hazard having this room like this." So we'd let it go for some number of days. "I'll help you guys. We've got to get it—"

BERNSTEIN: So the sophomores did that to you?

MURPHY: Yes, the sophomores. We were naive freshmen who didn't bother to lock our door!

BERNSTEIN: That's such a funny prank.

MURPHY: We didn't really think it was funny at the time, but we were also way too busy to bother with cleaning up the mess. Well, there were such classic pranks that happened that I'm sure you've read about. They were such fun. The one that was the best in my mind, was during the Harvard-Yale game. It was after Dan and I were married, before Jordan was born, so it would have been in the late 60s, early 70s. My parents were there because my father was a Harvard alum. The halftime show was starting, and this thing started rising out of the ground in the middle of the field. And it was this huge helium balloon that said "MIT" that they had buried. They had somehow snuck out there at night and buried this balloon under the--

BERNSTEIN: I've never heard of this.

MURPHY: --under the football field. Oh my goodness!

BERNSTEIN: That's so funny.

MURPHY: That was one of the classic MIT hacks—a balloon floating up in the middle of the Harvard-Yale game. It totally disrupted the Harvard-Yale game. And there were all the different things that got put on top of the Great Dome.

BERNSTEIN: They have those hanging in Stata, with little plaques about them.

BERNSTEIN: Anything else about your MIT career that we've missed?

MURPHY: When Dan and I lived in Framingham, from the late 1970's until we moved in 1986, I was an MIT Educational Counselor. I represented MIT at college fairs in the local area and encouraged local high school students to apply to MIT. I interviewed MIT applicants from Framingham and wrote recommendations. It was a wonderful opportunity to encourage young women to consider MIT. A number of the students that I interviewed, including several young women, became MIT students. I wish that I could remember their names. I recall several of them very vividly—except for their names. I'd love to know what they went on to do in life.

BERNSTEIN: Well, thank you so much for sharing all of this about yourself and your life.

MURPHY: Thank you, Emma.