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Interviews of the Margaret MacVicar Memorial AMITA Oral History Project

Audrey Buyrn – Class of 1958 & Class of 1965 (PhD)
(interviewed by Catherine Poon)

July 25, 2011

MIT Women's Oral History Project

Audrey Buyrn

MIT Class of 1958, B.S. in Physics

MIT Class of 1965, Ph.D in Physics

This interview was conducted on July 25, 2011 by Catherine Poon, Research Assistant to
Professor Margery Resnick, in McLean, Virginia.

ALUM: Audrey Buyrn, Class of 1958 B.S. in Physics, Class of 1965 Ph.D in Physics

INTERVIEWER: Catherine Poon

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PURPOSE: MIT Women's Oral History Project

Poon: This is Catherine Poon with the MIT Women's Oral History Project and I'm sitting here with Audrey Buyrn, MIT Class of 1958 with a BS in Physics, and Class of 1965 with a PhD in Physics. Audrey, thank you so much for joining me today. Let's start by talking a bit about how you came to MIT. Where did you grow up?

Buyrn: I grew up in Hartford, Connecticut, and went to Hartford Public High School. In those days, there were eight years of elementary school and four years of high school. How did I hear about MIT? That was nearly 60 years ago, so I really don't remember how I heard about MIT. I've always read a lot, and my mind is sort of like a vacuum cleaner – pulling in all kinds of information (and then, unlike a vacuum cleaner, organizing it). And, I must have pulled in the information about MIT in the course of reading. Why did I decide on MIT? Well, there really wasn't a great deal of competition. Where did you go if you were a very smart woman interested in science? The girls' schools were girls' schools. You couldn't go to Harvard – you had to go to Radcliffe. You couldn't go to Princeton – I don't know where you went if you wanted to go to Princeton, probably Vassar. And for me, going to a girls' school was totally out of the question. You have to remember that things were a lot different then. It was totally different – all of it. And, in my mind – and to a great

extent then, it was true -- girls' school prepared you to be a wife of an important man, and a mother to sons who were going to be important men and a mother to daughters who were going to be wives to important men. That was the mission of the girls' schools, and they were proud of it. But, that was nearly 60 years ago; I am sure it is very different now. That future was unthinkable – totally unthinkable. In a phrase I encountered recently, it was unthinkable to me to be only “a passenger in life”. I would have been very happy to have gone to Berkeley or Stanford. My parents would have allowed it, but I knew that they would have been very unhappy. In that era, it wasn't at all easy to travel cross-country. It still isn't easy – it is still a long trip, even without all the security lines -- and this was in the pre-jet era. MIT was only a two hour drive away. So, in essence, MIT was the default option. But what a default option!

Poon: So, you just heard about it from its reputation. Was there anyone in your school, like your teacher, that pushed you towards it?

Buyrn: No. I would say that my high school was a good high school. There's no doubt about it. And, I got a good preparatory education for college, but I can't say that there was anybody in my high school who influenced me about anything.

Poon: Did you know of anybody who went to MIT from your high school – and in particular – any women? Or were you the first from your school?

Buyrn: Certainly no women. I think there was one boy from my class who went to MIT.

Poon: So, when you actually got to MIT, were you impressed with the academics?

Buyrn: Oh, yes.

Poon: Did you feel challenged?

Buyrn: Yes. It was the first time I ever had to work. It was the first time I had met anyone who was smarter than I was. And this may sound awfully arrogant, but high school was no challenge.

Poon: No, that's not arrogant at all. I've heard that from many MIT alums and you should be challenged. So, how did you get into physics? Did you learn about it in high school and it really clicked? Or, was it something that you discovered in college?

Buyrn: You're asking me about something that happened 60 years ago. And, I'm not sure how I zeroed in on physics. It seemed both the least specialized of all the sciences and the most fundamental. I was glad that I chose physics. It allowed me to go in many different directions.

Poon: How many women were in your program at the time?

Buyrn: The entering class had about 22 women.

Poon: And what about at the end of it?

Buyrn: I think it was 14, but that was not atypical because I remember during freshman orientation, we were all in – it may have been Kresge, but I can't remember if Kresge existed in 1954 – but we were in some auditorium, and the speaker said, "Look at the person to the right of you and look to the person to the left of you. One of you three will not be here four years from now." So, the dropout rate was about 30%, and 14 graduating out of 22 is a dropout rate of 30%. The interesting thing was that it never occurred to me that I would be one of those three.

Poon: That's really important to have such self-confidence, especially during those times. So, out of these 14-22 women in your program, did you find that there was a sense of camaraderie? Did you all hangout?

Buyrn: The main hangout for women was the Margaret Cheney Room. It was in Building 3. I think it was Room 3-306 or 3-310, and that was the place where you went between classes or you went during a long period off. They had a living room, a kitchen, a study room and a small bedroom – if you wanted to get some sleep. Because all of the undergraduate women tended to congregate there, you formed friendships not only with people in your class, but with people in other classes. So, actually the closest relationships I had were not with own class, but with other classes. There was a small MIT women's dorm at that time at 120 Bay State Road across the Bridge. I've forgotten how many people it held – perhaps the order of 25 -- but it couldn't hold all of my freshman class plus the people who were still living there from the other classes. I lived in a place called Student House near Fenway which accommodated women from many different colleges in the Boston area. My roommate was a member of my class, Toni Deutsch (later Toni Schumann), who a couple of years ago was the President of the MIT Alumni Association. Student House was a truly ghastly place –prissy and very pretentious, but mingy – for example, they changed only one sheet each week, so one had two clean sheets only once a semester. I don't think there were any other MIT women at Student House at that time. I was always sorry not to have lived at 120 Baystate Road. I liked the housemother there, Mrs. Alvord, who was a very nice and sensible woman.

Poon: Do you think that women who lived in Student House from other schools were going through a different situation? You were going to a school that was very focused on technology.

Buyrn: Oh yes. There was a large contingent at Student House from Katharine Gibbs, which is an upscale secretarial school.

Poon: I see, so their experience must have been quite different than yours.

Buyrn: And the people who were running Student House never grasped that you might have to go back to MIT late in the day because of labs, or that you might want to stay late in the evening in the library to, gasp, use reference books.

Poon: Were there any female professors in your Physics Department?

Buyrn: Oh, certainly not, there weren't any in the Physics Department when I was an undergraduate. Later, when I was a graduate student, or maybe it was when I was at the Laboratory for Nuclear Science, there was Vera Kistiakowsky; I think she served a LONG apprenticeship as an instructor before being elevated to a professorship.

Poon: That must have been hard to not have a female role model. You guys were really pioneers of your time!

Buyrn: I think we all had our role models in our own head. I don't think we felt the need of a role model. When you are 22 students of a class of roughly 1,000, you have selected yourself pretty carefully. Would it have been nice to have seen a woman professor? Sure. But, I don't think any of us ever felt depressed at the lack of women professors. We were all pretty cocky. We were all saying, "We are unique! It's wonderful to be unique!" [laughter].

Poon: I saw on your resume that before 1975, you were an assistant professor of Physics, so that's kind of nice to see you in a position on the other side – in a leadership role in academics. I'm sure female students looked up to you.

Buyrn: Well, I don't know about that! I taught a section of 8.03 and then 8.04 (sophomore physics for non-physicists) one year when I was a graduate student. I may have been the first woman to teach a physics section – I'm not sure. I don't know if that made any female undergrads look up to me – they certainly wouldn't have said so if it did! But just a few years ago, a friend who did her undergraduate thesis in the lab where I was a Ph.D student said that she had looked up to me because I was a woman, and a physicist and a graduate student. She's had a distinguished career in plasma physics, and I was really touched – and surprised to hear that. As for how my students in 8.03 and 8.04 reacted to a woman section instructor in physics, a real oddity at that time – I had no problems with them. I didn't try to inspire anyone, I just tried to make sure that anything that was puzzling from the lectures or the problem sets was cleared up.

Poon: So, what did you do on your spare time at MIT? What did you like to do for fun?

Buyrn: I didn't join much. I've never been a joiner. I've always loved to hike, and so, I would do a lot of walking. I also did a lot of reading. I ice-skated and I got into horseback riding, so on Sundays, I would go to Medford where there were stables and I would ride.

Poon: Did you like Boston?

Buyrn: I liked Boston and Cambridge as well.

Poon: Were there a lot of interactions between Harvard and MIT at the time?

Buyrn: I would say none is a pretty good approximation. Harvard was “that playboy's school down the road”, and Radcliffe was, of course, just another girls' school at that time.

Poon: Looking back at your time at MIT, what would you say were the most valuable lessons that you learned from your undergrad experience?

Buyrn: How to work hard.

Poon: Was this your first time being challenged academically?

Buyrn: Yes. I think I could have gone through the first 12 years of schooling without having gone to school and not missed anything. I sure can't say that about MIT!

Poon: A lot of alums that I have talked to say that they learned problem solving skills from MIT that helped them in their professional lives. I see that you attended MIT for graduate school to get your PhD in Physics. What made you want to continue your education at MIT?

Buyrn: I think it's mainly because I liked MIT, but I did apply to three other schools. I applied to Yale, Columbia, MIT and I forgot the fourth school. It was either Brown or Rutgers. I interviewed at Yale and Columbia, and I just wasn't terribly impressed. I was somewhat apprehensive about living in New York City. I tried to get some information about housing for graduate students, and I was in essence told, "When you decide to come to Columbia, we will talk to you about housing." So, I said that I couldn't decide to come to Columbia until I learned something about housing, and the response was like, "Okay, goodbye." And at Yale, they were hung up on passing the language requirement first semester. I said, "Sorry, I just don't feel like spending my last free summer cramming French and German." And, the person I talked to said, "Well, we really want you to pass your language requirement the first semester." Now, I must say when I told Professor Bromley that, he said, "Oh god, why do they keep telling the students that?" But by then, I had already made up my mind.

Poon: It sounds like MIT was just a good fit.

Buyrn: And the other schools may have been too, but there was no incentive.

Poon: Did you see a huge difference between your undergrad experience and your graduate experience at MIT? Did you find that there were more like-minded people in graduate school?

Buyrn: In a way, graduate school was easier. In another respect, it was harder because I was very tired. I really should have taken a year off. Someone in several classes behind me – I think she was a freshman when I was a senior – when she was a senior, she said that she was going to take a year off, and it was sort of like a “click”. I should have done that. I think that was Marla Moody.

Poon: Oh well, hindsight is 20/20. How many women were in your graduate program? I would assume less than the percentage in your undergrad.

Buyrn: In my undergraduate physics class, I think, there were three women. There was me, Betty Ahola – her last name is Kizilos now - and then there was another woman named Alison Peters, but she transferred out in her Sophomore year, and there may have been one more Physics major. In the first year of graduate school, my roommate (in Bexley Hall) was a Physics major. She was a Chinese lady from Taiwan. And then, there was June Matthews who later became the Director of the MIT Laboratory for Nuclear Science.

Poon: It's so interesting that you can just list all the women on one hand! And now, MIT is 60% men and 40% women. And from what I hear, the 40% women are doing better than the men!

Buyrn: [laughter]

Poon: So much has changed since then!

Buyrn: Oh yes, it was an entirely different world. And it was an entirely different world, not just at MIT, but in the United States as a whole.

Poon: What were the men like? How did they treat the women?

Buyrn: It's hard to generalize because there were roughly 1,000 men in my class and roughly 4,000 at MIT, and there were lots of different types. Some of them were real bores, but of course they were 16, 17, 18 years old, and there's hardly anything more repulsive than a teenage male. [laughter]. I wouldn't say that anybody had any real problems. On the whole, they were okay. They were just really young. As I said above, I had no problems with them when I taught a section of sophomore physics. Many MIT women students, including me, wound up marrying some of the better specimens of MIT men. The boys – one can hardly call them men – could be pretty crude. I was in 10-250 along with several hundred graduate students being assigned to sections to meet our German language requirement. One of the instructors was a dazzling beautiful young woman, introduced as Mrs. Schmidt (can't remember her name, but she was definitely MRS). There was an eruption of howling and whistling and stamping – all meant to be complimentary, I suppose. But just really, really crude. She laughed. The other instructors laughed. The professor in charge laughed. The thing is, I doubt that she had any problems in her section. Passing German quickly was important.

Poon: Do you think a lot of women in the classroom were anxious about raising their hand to participate? Do you think that the women were quiet in the class?

Buyrn: Oh no, we weren't quiet.

Poon: Yes, that makes sense. If you were to apply to a school where you knew you were going to be less than 5% of the student body, then you would come in with a certain determination and assertiveness. So after your graduation, did you feel that there were certain expectations for you?

Buyrn: Do you mean at MIT or from the world at large?

Poon: From the world at large about the next step. You said that there were some women who you were living with who attended a secretarial school and I'm sure there were some other women who were pressured to get married early.

Buyrn: I think that the expectation was that I would have a good career, and that was my expectation as well. I would say that MIT helped a great deal in that respect because when I started after graduate school, it was still quite unusual for women to have careers. It was a different world - you cannot begin to understand how different it was. For example, in the newspaper, the Help Wanted ads would be "Help Wanted: Men" and "Help Wanted: Women". Under Women, it would be secretarial work, and under Men, it would be for engineering. So, having been to MIT meant a certificate of seriousness. For many years, when I went to meetings with people that I didn't know, I would wear my Brass Rat. I don't ordinarily wear it because it's not all that attractive. But, if I felt that I had to make a point, I would wear the Brass Rat. And, sometimes I would even ostentatiously fiddle with it as if to say, "Here it is!" Even a Ph.D. from MIT didn't insulate me completely from the times. When I was looking for a job after I got my Ph.D, I went to the MIT Placement Service and the woman there suggested that I take a year off and learn to cook. I really suppressed that memory!

Poon: No one can take that degree away from you. So, what kind of advice would you give to young women who are breaking into the workforce now?

Buyrn: You know, I honestly don't understand why it is still taking so long. It's been 53 years since I graduated and close to 50 years since I went into the workforce and nearly three generations later people are still complaining how women are expected to do this and women are expected to that. I guess my only advice is to forget about what other people expect. Do what you want to do. Figure out what you want to do and do it. If you are making excuses that you can't do this or that because you are a women, get over it. I really don't have much patience with this continuing complaining about how hard it is for women. It is so easy compared to what it was 50 years ago. Now, I said we wouldn't mention children, but I do understand that most women do want children and I do understand from observing my friends that taking care of children requires a lot of energy and a lot of time. All I can say is figure out what your energy level is and figure out how much time you can devote to work plus children. Some women are extremely energetic. I remember Millie Dresselhaus. She was a professor in the School of Engineering – one of the pioneer professors – and I think she had at least four children. She showed up in her lab the day after she gave birth to one of her children, and her technician was absolutely appalled. She would tell this story and laugh, and say, "My technician was just horrified!" But Millie was a superwoman.

Poon: I think it's still a challenge for women with children. It's hard to balance your personal life with work life and children. You have to prioritize at some point.

Buyrn: Yes, it is, and you have to decide what you are going to give up. I don't think you can have it all if you have children. Maybe its just time for yourself that you have to sacrifice, or maybe it is the rate at which you progress, but unless you are super, super exceptional, I don't think you can have everything you want. It would be interesting to ask Pres. Hockfield if she had to give anything up.

Poon: But it is a shame that we have to give something up. I don't know if we would be having the same conversation if we were talking about men and careers.

Buyrn: No, we wouldn't. It's almost unthinkable for a man give up a portion of his career, or to delay it or slow it down to take care of children. To some extent, biology is destiny, and I think we just have to accept it and work around it as best we can. By work around it, that includes influencing policy. Certainly maternal and paternal leaves, for example, help women have both careers and children. But, from my observation, maternal leaves and later leaving work promptly to pick up children from day-care, and taking days off to take care of sick children slows down career advancement. How can it not? There is a good Darwinian reason for women to want to have children. Obviously, to the extent that my lack of interest in children is genetic, those genes are not being passed on.

Poon: Yes, it's life's choices. Women have to make hard life decisions.

Buyrn: One of my friends from MIT decided that she could cope with one child – not two, one so she had one child – she did very well in her career and her one child was a minimal interruption. Other women have decided that they can cope with two with minimal interruption. Beyond that...I don't know what a Millie Dresselhaus would say. But remember, she is a superwoman.

Poon: I think it also has a lot to do with their partner. That's huge. These days, there is paternal leave and more at-home dads.

Buyrn: The other thing is what branch of science and engineering you go into. If you going into a heavily laboratory intensive field, it is going to be much harder. You can't leave a laboratory experiment because you have to pick up the child up from the babysitter.

Poon: It also has a lot to do with your resources. If you want to make the decision to hire a nanny to help raise your kids, it could enable you to have more time to balance a career.

Buyrn: But then, you're going to have to postpone until you can afford the nanny.

Poon: That is true. There are so many decisions to make. So, I saw on your resume that you went into politics as a consultant. How did you get into that?

Buyrn: I was at MIT at the Laboratory for Nuclear Science from 1971 to 1975 and my appointment ended and my husband got a very good offer in Washington DC from Science Applications, Incorporated. I was looking for a job in Washington and at that time, there was a new program run by the American Association for the Advancement of Science which placed mid-career scientists in Congressional Offices for a year. It was called the AAAS Congressional Scientist Fellowship. I applied for one of the fellowships, and got one, and was assigned to the Office of Technology Assessment (OTA) which was an agency of the US Congress. OTA responded to both the House and the Senate, and it was bi-partisan. We had a governing board which was split 50/50 between Republicans and Democrats. Our mission was to give Congress advice on technical questions. And not just, "Will this thing work technically?", but

“What would the economic and social impacts of the particular technology be?” I went into the Energy Program, and this was just about the time – about 1975 –that energy became a very big topic because the Oil Embargo of 1972 had made it clear that we were heavily dependent on Mid-Eastern oil. Energy prices had gone up and Congress was very interested in more efficient uses of energy. So I worked on those issues for three or four years.

Poon: Did you enjoy it?

Buyrn: Oh, yes, very much. Then, I was assigned to the Materials Program as the Program Director, and among other things, we looked at issues of hazardous waste. We did reports on Superfund which is the clean-up program for hazardous waste sites like Love Canal, and on industrial waste reduction, and then as things evolved, industrial policy. Then, in 1995, the 104th Congress (Newt Gingrich’s became Speaker in the 104th) decided to abolish OTA to save money. We had a budget of \$20 million a year, and we paid for ourselves by helping Congress formulate effective policies and programs. The deficit at that point was \$200 or \$300 billion a year. You can see by saving \$20 million, they would taken a really big bite out of the deficit – 0.01%! OTA supporters won a very big fight on the floor of the House, but then we lost the critical Senate Committee vote, and OTA was defunded in reconciliation. I went to work for Senator Glenn for the last year.

Poon: Do you think that it was hard to be a woman in politics? Do you think that your voice was heard over the men? Were there any obstacles that you had to overcome? Did people take you seriously?

Buyrn: No, people took me seriously, and if they didn't, I would just fiddle with the MIT ring – I mean, literally. Things were starting to get a lot better in the late 70s and in the 80s. There were some very high ranking women staffers, and women had started to be elected to the House and Senate in non-trivial numbers.

Poon: So in general, you don't feel as if you were being treated differently than your peers?

Buyrn: No, I don't. If you hold yourself with assurance and you speak up and what you are saying makes sense, it doesn't take long before people start to take you seriously. If you just sit there and don't say anything or act silly, of course they aren't going to take you seriously. And the MIT degree helped enormously; it just swept away any automatic presumption of incompetence or light-mindedness. If my degree had been from Mount Holyoke, I think I would have had a much, much harder time. And I'm not picking on Mount Holyoke. I'm just saying if my degree had been from a girls' school, I think I would have had some pretty serious preconceptions to overcome. Another factor that helped me was that I am tall. I'm a bit shorter now, but then I was 5'10.5". That's tall even now, but 60, 50, 40 years ago it was very tall. Almost no man could look down on me in the purely physical sense. If I had been 5'2", I would not have had the presence nor the early self-assurance that I did.

Poon: What was the most memorable moment in your professional life? What were you the most proud of?

Buyrn: The thing that made the most impact was the work we did on waste reduction. We did a report for Congress on how to reduce industrial waste streams, and that led to some pretty far-reaching legislation.

Poon: I think that's really important because these days everyone is so green conscious.
Was that one of the first times the government had really considered green initiatives?

Buyrn: This was back in 1985, and what was surprising about that report was the degree to which many industrial waste streams could be reduced at very low costs -- some of them totally eliminated -- and the degree to which companies like Dow and Dupont recognized that. Dow even had a cost center on waste reduction. Although it seemed -- at first glance -- an environmental, fuzzy pie in the sky thing, it turned out to be intensely practical. I think getting across to Congress that this is something that can be done economically and without ruining American industry was important and surprising at that time. At the beginning, our Advisory Panel was lecturing us on how we couldn't repeal the 2nd Law of Thermodynamics. When they said that, I replied, "At MIT, the way we formulated the 2nd Law was 'You can't shovel shit into a horse and get hay'." And, there was this appalled silence and then everybody laughed and from then on it was okay.

Poon: [laughter]. Do you keep in touch with any of your fellow alumnae?

Buyrn: Yes, I keep in touch with a few people -- not so much people from my own class, but from classes a little bit behind me.

Poon: And, have you visited MIT since your time there?

Buyrn: Yes, I have been back many times. I am on Dean Kastner's Advisory Committee for the Department of Science. So, I go to MIT twice a year at least.

Poon: Do you think that MIT has changed a lot since then?

Buyrn: It has change a great deal. First of all, I get lost because there are so many new buildings. Secondly, I'm not sure if I could get in with the caliber of students today. I mean, they are so impressive. They are almost like a different species.

Poon: I think a lot of applicants when they apply to MIT are very diverse and much more well-rounded.

Buyrn: I think that's a difference. In my years, there were a lot more nerds – more nerds and nerdier nerds. [laughter]

Poon: Well, that's all that I have for today. Is there anything that you wanted to add or any last thoughts about your time at MIT?

Buyrn: I just wanted to say that it really was a different world when I was there – not only at MIT, but the country at large. In the 50s, there was no such thing as Youth Culture. Adults did not want to be teenagers or children. Pre-adults wanted to be adults. The adults had the money. They had the influence. They had the power. Everybody wanted to grow up. Adults, of course, wanted to be a few years younger, but they didn't want to be young, and they didn't envy the young. People did grow up faster.

Poon: That is completely different than my generation where everyone wants to stay young forever to the extent of obsession. Did you feel that you had to grow up too quickly?

Buyrn: No, you see, it was normal.

Poon: It sounds as if there was much less hand-holding than these days.

Buyrn: Much less. There was a presumption of competence, and today, there is a presumption of incompetence. And one thing I liked about MIT was there was no hovering. I would say that we were treated with benign neglect. If you wanted to talk to somebody, there was always somebody to talk to – professors were very

approachable, and there was an assistant to the Dean of Students, Ruth Bean, who was “our” dean -- but nobody was continually worrying about you. I don’t know what it is like in terms of student counseling today.

Poon: That would really prepare you well for work because there you are expected to be independent and competent, so I don’t think that is a bad thing.

Buyrn: Great, that’s it then.

Poon: Thank you so much. It was a pleasure.

-- END OF INTERVIEW --

Note from Buyrn:

You might want to look up the song “My Mother was a Tech Coed”. This was written by MIT women students a few years before I got there, and was performed by MIT women students in a student musical revue. There were about 10 to 15 verses, of which I remember only the first two and the last.

She never held me on her knee

But she was all the world to me.

That lady with the pointed head.

My mother was a Tech Coed.

She couldn’t cook, she couldn’t sew

But she could fix a radio

She used T-squares to make a bed

My mother was a Tech Coed.

Now that she is up in heaven

She fixes streets with D11

She was the queen of grey and red

My mother was a Tech Coed.

(D11 was the freshman drafting course.) We had enough self assurance to make fun of ourselves. There was nothing self-deprecating about this; we didn't do self-deprecation. "Coed" is no longer PC, of course, but PC didn't exist then.

Thanks for the opportunity to remember my MIT years.

-- Audrey --