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Interviews of the Margaret MacVicar Memorial AMITA Oral History Project

Joyce Zars Wolf– Class of 1963

(interviewed by Natasha Balwit)

June 7, 2013

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WOLF: I was born in Elmhurst, Illinois in 1942. Elmhurst is a suburb of Chicago. My family consisted of my parents and my sister, who's 14 years older than I am. We lived in Elmhurst until I was seven or so, and then my parents decided to go on a big adventure, and they moved to Glendale, CA, but unfortunately my father could not find work there. At that time he was about 49 years old, and he was competing with a whole lot of young veterans just out of WWII who had moved into the Southern California area. So after two years we tucked our tails under and went back to Illinois. I finished growing up in Bellwood, Illinois, which is another suburb of Chicago. It's a little bit closer in to Chicago than Elmhurst. In high school I was torn between humanities and science. I did have the advanced class in Calculus. My year was the first year that my high school offered a college level class in Calculus. I took that, but in order to do that I could not take the special English class, which I would've liked to have done also. My mother and father were both second-generation German immigrants, and their parents were mostly farmers. My father was born in 1900, my mother in 1903, and they were largely part of the German-American community. It seems almost medieval now to think of it, but my mother completed only the 6th grade, and then she was sent to work as a maid with another family. She was very happy when she got to be 15 or 16 or so and could get a factory job and be out on her own. My father was a truck driver. So they were a little worried when I wanted to take things like Latin and Calculus because they didn't quite see how one was going to make a living out of that. My sister had taken secretarial classes, and she was a secretary, so my parents were a bit worried that I wasn't going to be able to make a living off of these strange things like Latin and trigonometry and Physics and so forth. But they were very supportive even though they were worried. So then when I came to think about going to college, I applied to three places: University of Chicago, University of Illinois, and MIT. I needed a scholarship to go to any of these except University of Illinois because my parents really had no resources of any kind. I received a National Merit Scholarship awarded by the AFL-CIO, and so I've always had a tender spot in my heart for anything to do with unions or labor, because after all, they paid my way through MIT. I was accepted at all of those colleges, and I had almost made up my mind to go to University of Chicago. My scholarship would have covered the

tuition, and I could have lived at home and commuted, whereas at MIT I had to apply for additional financial aid to go along with the National Merit Scholarship. So I'll tell you--you might like this little story. I was interviewed, just for the financial aid, because I'd already received my letter of admission. Anyway, the interview was done by a group of MIT alumni in Chicago, and it was held at a private club, which was male-only, and the doorman had to smuggle me up the back stairs. He threw open the door, and there was this--to my eyes it seemed to go on forever--this oval green table, and all these men in suits and ties were sitting around it. There was one vacant chair at the head of the table, and that was for me. I was grilled quite hard by all these men. They may or may not have said it explicitly, but the impression was that they were thinking, what's a girl doing at MIT? The implication was that I wouldn't be able to handle it, and I'd probably get married my first semester there or something, and there wasn't really much use in giving me any financial aid. It made me quite angry. I don't recall exactly what I said, but being given a challenge like that made me quite determined to try MIT. I convinced them, or at least I convinced a majority of them because I was eventually told that I was awarded the additional financial aid that would enable me to come to MIT.

BALWIT: What did your parents think of your going to MIT?

WOLF: My parents, well, they were really very sad just to see me go away because I hadn't ever been away from home. I do remember my dad putting me on the train, standing on the platform and waving as the train pulled away. Of course I was 17, and the whole thing was a grand adventure for me, at least until I got to taking my first Physics exams. But it was an adventure just getting on that train and going to the East coast, where I'd never been before. Then of course the environment at 120 Bay State Road, the freshmen women's dorm, was very supportive. I think there were 16 or 17 of us that lived there. That was the capacity of the dorm, and there were a few other women that were put up at a BU dorm, which must have been very difficult for them. Anyway, so the women that I met were just great, and we all got along wonderfully. Pretty soon, no more than a month or two into the term, I met a guy, and in a few more months, we were going steady and engaged. We got married a week after graduation. So when I'm asked the question, "How did MIT change your life?" I think of how--now, I haven't done an actual tally--I think about half the women in my class married classmates. There's five couples from my class here today for the reunion.

BALWIT: Wow. Makes me a little nervous. Maybe I'll meet somebody. Was your husband in the same class as you?

WOLF: Yes. We had a senior counselor at the freshman women's dorm who gave us some advice. She said, "Play the field until your senior year. Don't get engaged until your senior year. Your senior year, that's when you get engaged, and then you get married after you graduate." Indeed, she followed that advice.

BALWIT: What was it like, dating at MIT? Or going steady?

WOLF: Well, there were the co-eds. (I don't know that that word is used so much any more. I don't think it's used at all, really.) Initially we lived for the one year in the freshmen women's dorm, and we were all quite close. The guys that we wound up going steady with, and there were a fair number of them, I would say ten or so, we called them, "honorary co-eds." They were the boyfriends of the co-eds that tended to be in our social group. I'm not sure if any of them were fraternity guys. I don't think so. I think most of them were from the dorms or independent living. So it's been a close-knit group. I have one story that I really do want to tell. This was near the end of my senior year, and interviewers were here on campus. One of the places I interviewed for was the Harvard Computing Center, which was just setting up. That was the beginning of 1963, and they really didn't have more than a plan at that time. What they were looking to do was hire eight new grads, and that was going to be the nucleus of the Harvard Computing Center. So I interviewed, and I took an aptitude test. I don't remember what that was but it seemed to me there was a lot of math in it that was pretty easy. I was offered a job at the Harvard Computing Center. The letter--I'm not sure if letters are still the media of notification of things like jobs or if it's email, or telephone calls-- anyway, I got the offer of a job. The letter asked whether I would accept and what time I could start. Because I'm always sort of a nice, helpful sort of person, I wrote back saying, "Thank you, I accept, and I can start approximately June 21, and by the way, when I return to the Boston area and am ready to start work, my name will be changed because I'm getting married, and my new name will be Joyce Wolf." So I got a phone call from a man saying (in a deep, grouchy voice), "You're getting married? You checked 'single' on your application." I said, "Well, I am single. I'm not married." He responded, "Well, I don't know what we're going to do about that." A woman also phoned me. Both names I've forgotten, but I really wish that I remembered their names. As you can tell, that was fifty years ago, and I'm still a little bit angry about it. So they asked, "What are your plans? Do you plan to stay in the area? Are you going to have children? What form of birth control are you planning to use?"

BALWIT: Unbelievable.

WOLF: Isn't it? I think I sputtered a whole lot. But I said, "No, we're not planning on having children right away, and I'm on the pill, and why are you asking me all this stuff?" They said, "Well, well, we're going to have to discuss this, and we'll get back to you." They called me a few days later and withdrew the job offer. So that's what things were like in 1963.

BALWIT: What did you do?

WOLF: Well, we got married, and we came back to the Boston area. It was quite awkward because my husband had not been able to finish his degree. There was a Quantum Physics class that he hadn't been able to pass. The plan had been for him to retake it during the fall semester. I was able to get some little part-time job. It was something like 10 or 15 hours a week, so he had to look for work as well. I finally got a full-time job late in the fall, but by then my husband was already immersed in an MIT lab job. In addition to trying to pass those classes, he was working quite a bit, more than half-time, and as a result he didn't pass one of those classes. But he had another job offer, so about the end of February we left the Boston area. Things could have gone quite differently if Harvard had not withdrawn the job offer they had extended to me. I've not quite forgiven them for that.

BALWIT: Were things like that common?

WOLF: I don't know. People didn't talk about it that much.

BALWIT: What was it like at MIT, being a woman here? Did you feel like professors took you seriously, or was it harder?

WOLF: Some did, some didn't. Some were wonderful, others were kind of patronizing. I would say that I personally never encountered any case of real discrimination, you know, where I didn't get the grade that I thought I deserved or something like that. It was more a matter of an attitude. I had to work harder than the guys, I would say. Some professors did have the attitude that women didn't belong here. Mostly it wasn't so much hostile as patronizing.

BALWIT: So you've told me a little about what you did after graduation. What else have you been up to the past fifty years?

WOLF: For about ten years after graduation, we moved around a great deal. My husband got a job with the Smithsonian Astrophysical Observatory. They're based in Cambridge, and at that time they were running an optical satellite tracking program. They used these huge super-Schmidt telescopes. They looked like cement mixers with their

huge apertures, because what they needed was a wide field of view. It was optical satellite tracking, so basically they had predictions of satellite orbits, and they would photograph them with 35mm film, develop the film, put it on a light box, identify the stars, and measure the position of the satellite and then teletype the coordinates back to the headquarters in Cambridge. There were a dozen of these stations around the world, and that's what attracted my husband. Of course, they weren't hiring any women at all because when you have five people working at a station in close proximity, you can't have any of them be women; that's what they said. That was the rationale. They had two stations in the US, New Mexico and Florida. Then they had South Africa, Peru, Spain, Greece, Japan, India, I think there was one in Iran... anyway, there were a dozen all around the world. Oh boy, which one are we going to go to? New Mexico, which wasn't all that exciting. We had a year in New Mexico, and that alternated with a couple of stints back at the headquarters in Cambridge, where my husband finally managed to pass his Physics class and get his degree, which was in '66. Then we had a year and a half in Tokyo. My husband was the one with the job, but I really felt like I was in there doing my bit. My oldest daughter was born in Tokyo. That was in '67. After that was Athens. That was another year and a half. Then we returned to another assignment at headquarters here in Cambridge, and my second daughter was born in Cambridge. My husband then decided that he really wanted to go on and get a second degree, and it turned out that Queens University in Belfast, Northern Ireland, had exactly what he wanted. He was interested in optics and lasers at that time. So we spent about a year and a half in Northern Ireland. I did work for a year in 1966 at the MIT Magnet Lab, but other than that, this was the time that we were raising the kids and traveling, and I was not employed. Eventually we came back to the States to California, and my husband got a job at JPL, Pasadena: Jet Propulsion Laboratory. That was in '72, and at that point I started taking a couple of classes, and I was hired at JPL in '74, and I'm there still. I got a master's degree in math from Cal State LA. I was working part-time and attending classes part-time. JPL has a tuition reimbursement program, and it seemed like a shame to ignore that, so I got a master's in computer science in '84. That was wonderful because we were able to listen to the lectures via closed-circuit TV from USC, and we only had to go to USC to take exams.

BALWIT: Is that the University of Southern California?

WOLF: Yes. (The nickname is the University for Spoiled Children.) So I picked up the two master's degrees, but I did not go any further than that. My husband died in an accident in 1983, and at that point I didn't feel like taking on anything new. I needed the support of the people around me

just to raise my kids and keep going. So let's see. At JPL, I've worked on a number of projects, but nearly all of the time I've been with a group that puts magnetometers on spacecraft to measure planetary and interplanetary magnetic fields. When I first started with them it was Pioneer 10 and 11, which were the first spacecraft to Jupiter and Saturn. But people don't remember them because they didn't have cameras, so there are no images to stay in people's minds. The Pioneer spacecraft measured fields and particles, cosmic rays, stuff like that. I did not work on Voyager. My husband, while he was at JPL, worked on Viking 1976. That was the first spacecraft to land on Mars. Well, there was a pair of them, Viking 1 and Viking 2, that landed on Mars in 1976. That was one of the most exciting things ever. I didn't work on it, but my husband did, and he got me into various viewing rooms and events, just to see. The first image came back--usually they came back row by row, but the Viking image came back column by column. Just to see the first column of pixels come on the screen, and then another one, and then another one, and we could see rocks. People shouted, "Rocks, rocks!" This was the first time, ever. In some ways I think that was the highlight of my time at JPL even though we did so much more. Just that first image. We're there on Mars, and we're looking at the rocks.

BALWIT: And no one's ever seen them before. It must have been amazing.

WOLF: Exactly, exactly. So through the years, there was Pathfinder, with the little Sojourner that was about this big and that went to Mars and crawled around a little bit. That was 1997. It was the first lander on Mars since Viking in 1976. And then Curiosity landed. I get all choked up. It's like, "Mars, Mars... we're there." JPL has been a really great place to work. I've had good people to work with and some of the work has been extremely exciting.

BALWIT: It sounds great. And it sounds like they were more accepting of your family life than Harvard.

WOLF: Indeed, indeed.

BALWIT: So how many kids do you have?

WOLF: I have two daughters. They're in their 40s. One is a librarian, and the other is an artist, a silversmith. She teaches because you have to teach in order to make a living at that kind of thing. Neither one married, so I have no grandkids.

BALWIT: It's so interesting to me to hear how you kind of made a life for yourself after MIT. I think most people go on and do incredible things

- from here, but people also struggle to find something that's meaningful to them. It sounds like you really enjoy your work.
- WOLF: It's been good. One always wonders, you know, what life would have been like if different things had happened. I have to admit I'm a little envious of my women classmates who all seem to have their PhD's and are professors.
- BALWIT: Did you have other interests besides math? Were there other fields you considered?
- WOLF: After I got to MIT, you mean? After I made the decision to go for science rather than humanities? Well, I don't think MIT had an astronomy program at that time. I would have enjoyed that. I think they had maybe one or two astronomy electives, but there was no program. If there had been, I think I would have gone for that. I loved Physics, but I found it really, really difficult, especially the lab work. I could handle the math, but I don't have a good talent for spatial perception, so there were a lot of things in Physics that I found extremely difficult. But I loved it. That was my husband's field, so I got exposed to a bit of it. Let's see, I don't know if any of the numbering system is the same, but remembering what I took... I got through the second year. 8.01 and 8.02 were required in the first year, yes? 8.03, 8.04? I did take 8.041, Optics, the one the Physics majors took. It was notorious. What I heard was that 25% failed that semester. I got a D and was really happy with that. Well, there are some more memories. Just little things. There's one that hasn't left me. My freshman year, it was very early in the term. It may have been the first or second week of class, and I don't remember what class it was, but the students went into the room, and the professor was nowhere in sight. I was the only woman in the class. And this guy, whom I had spoken to a couple of times before in a friendly fashion—at that time I smoked (bad, bad, bad!), and I think I'd asked to borrow a cigarette or a light from him. So I'd spoken to him a couple times, and I liked him. But he was in this class, and he goes up to the blackboard and he writes--you'll not believe this--he writes "rape" backwards. E-P-A-R. He looks at me and then he erases it. I think within a minute or two the professor came in. I have never quite been able to figure that out.
- BALWIT: No, that's bizarre.
- WOLF: I think I didn't really feel like talking to him after that.
- BALWIT: No, I wouldn't either. I would avoid him! That's crazy.
- WOLF: It may have been like little boys tease little girls, you know, that kind of thing. But I don't know. It was just weird. As I said, he wrote it, and

then he erased it. But he looked at me. I mean, why?

BALWIT: That's frightening.

WOLF: Yeah. Well, as I said, the professor came in, and everything proceeded normally, and I think I kind of avoided him after that. If I was out of cigarettes, I found someone else to borrow them from. One more story. Early in the freshman term, and this you may actually be able to check somewhere in the archives, there was the humor magazine, Voodoo?

BALWIT: It's still around.

WOLF: Okay. Well, a couple of guys from Voodoo approached me. They said they wanted to have a publicity stunt with a co-ed. And I said, "Well, why'd you ask me?" And they said, "Well, we just looked at all the co-eds, and we decided you were the one to ask." They said, "What we want to do is to advertise sales of our next issue by saying, 'Come to the lobby of Building 10 and you'll see a view of a co-ed that no one but her doctor has ever seen before.'" They'd got a chest x-ray. They had me come early, before the announced time which was around noon, and I sat on a chair on a table and I kicked off my shoes. They put a big black drape over me, and I held the x-ray. They made a big shpiel. "Here's a Tech Co-ed! Here's a view only her doctor has seen." Then of course they whisk off the cloth and I'm holding the x-ray up. There was this deep-throated roar. There were all these guys. It was like *rumble, rumble, rumble!* It was just all this testosterone in the air. What was really amusing was that an assistant Dean [Ruth L. Bean], had heard about this as Voodoo had been giving a lot of publicity to this. The week or so before she called me into her office and said, "What is this all about? Is this going to be tasteless?" I was able to tell her I was just going to be holding the X-ray, and I promised I'd be fully clothed.

BALWIT: They just thought you'd be a good sport, so they asked you?

WOLF: I asked some of them, and they just said, "Well, we thought you might be our best candidate." So I don't know. You could probably find it in the Voodoo archives. This is '59. It was probably about November.

Thank you. I really wanted to get that story about Harvard into the archives somewhere. Other things were fun, now you look back at them and think they're quaint, but that thing about Harvard...

BALWIT: Things have changed.