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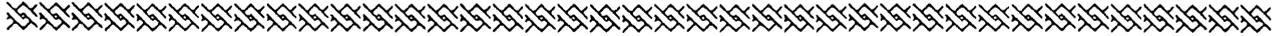
Interviews of the Margaret MacVicar Memorial AMITA Oral History Project

Patricia Christie – Class of 1996

(interviewed by Soyini Liburd)

December 27, 1999

MIT Women's Oral History Project



Interview of: Patricia D Christie, PhD
name

1996 Chemistry
year graduated *major*

National Science and Engineering Research Council
accomplishments
Summer Research Award, ESG Instructor

Interviewed by: Soyini Liburd
name

2003 6 & 15
year *major*

Interview: 12 / 27 / 1999 1 hour
date *length of interview*

ESG (Experimental Study Group) Bldg 24 MIT
location

circumstances

Supporting documentation available:

curriculum vitae
personal

general—archival

Soyini Liburd interviewing Dr. Patricia Christie.

Soyini: Good Morning Doctor Patricia Christie; I am Soyini Liburd, MIT Class of 2003 and I am conducting this interview as part of the MIT Women's Studies Oral History Project.
Can you tell me about yourself?

Patricia: Sure.

I am Canadian and my parents are both Canadian and my family has lived in Canada since the 1800's. Both my mother and father are from the Prairies which is the American equivalent of the Midwest. My Dad grew up in the big city of Winnipeg, Manitoba and my mother grew up in a small prairie town called Dauphin, Manitoba.

My mother is a registered nurse and my dad is an accountant. When I was growing up, we lived mostly in Ontario. I spent most of my time in a place called Thunder Bay which is in Northern Ontario. It's in the middle of nowhere, it's bush country, the town - well actually it's a city that I grew up in has 113,000 people but it is in the middle of nowhere.

When I was growing up...I'm one of three I'm the oldest. I have a sister who's 23 months younger than I am and a brother who's 4 years younger than my sister, so I was the oldest. When we were growing up science...or education, was really important. I thought that - when I was growing up - that I was going to become a doctor, a medical doctor, and that's what I was going to do.

I graduated from high school when I was 17, and in Ontario when I was going to school, there were 13 grades and so you had an extra year of high school. I graduated 2 years early, so I did grades 4, 5, 6 in 2 years and I did 10, 11, 12 and 13 in three instead of 4. I knew that I was going to go to University but I knew that I didn't want to go at age 17 because in Ontario at the time the drinking age was 19 and I knew I'd be excluded from all the social events.

That was very important to me, to be able to hang out with my friends.

So when I was 17, I went away for a year and I worked as a nanny in Switzerland. So I went to Zurich for a year and then I came back to Canada and - since I had spent all my money - I lived at home and went to school at the University that was in my home town of Thunder Bay. Lakehead University at that time - well to a certain extent now as well - is a small liberal arts school. There were about 3500 total students, my dad works there as an

administrator, he's the financial aid officer there. I went into a dual program of Biology and Chemistry.

Patricia: In Canada you can take a 3 year program which gives you a Bachelor of Science and then the 4th year is called and Honor Science. I did a 3 year program of double major Biology and Chemistry, and at the time I was still thinking about going to med school. But after my 2nd year of University I did Biological research, I worked with a plant anatomist and we looked at tree buds. Alastair Macdonald taught me how to do research and about how much fun it was to go out... and we were looking at tree inflorescences which is how the buds of trees turn either to a vegetative shoot or a male or female flower. He taught what science was - how 'cool' science was, so it got me interested in science. I was still in the double biology and chemistry major and so I did my Honor's Biology thesis project with Alastair. Then I decided... that was in my 3rd year of University... so then that summer - I spent a summer working at a starch plant, a starch manufacturing plant, where I did quality control, where I tested the quality of starch that was coming out of the plant. Incredibly boring and it made me decide that I did not want to do quality control which is basically what you can do with an undergraduate degree so I did a Honor's thesis project in Chemistry on water quality where I looked at different types of water samples and their quality and the amounts of carcinogenic compounds called polyaromatic cyclichydrocarbons. I did that in my 4th year and around the same time I got introduced to Bio-Inorganic Chemistry, which is the field of Science that I most like, where it talks of role of metals in Biology. I went and I talked to the professor who taught us this class and he sort of 'felt me out' for things that I would be interested in doing and one of the things that I was most interested in is an enzyme that was called nitrogenase. And so what I did was - that was one of my areas of interest - so I wrote to the professor who was doing nitrogenase at MIT, Professor William (Bill) Orme-Johnson and he told me to apply to MIT and so I did.

Soyini: So that's what led you to come?

Patricia: That's what led me to come to MIT. I applied, and as it turned out that was the only graduate school I applied to. I got in... and that's because MIT's application deadline is mid-January and all the other schools I was going to apply to, they were April. So by the time end of February came around I'd already come to MIT. I'd visited, decided that was the school for me and I didn't bother filling out any more applications ,

Soyini: What gave you... what made the decision for you that this was the school for you?

Patricia: It just looked like it was a really neat place to do Science. I had...because I came from a liberal arts school, my graduating class in chemistry was 5, I was the only girl. My graduating class in Biology was 20, and there were maybe 3 or 4 girls.

And so, to come to a place like MIT where everybody was interested in Science, was a totally new experience for me. It was really neat 'cause you didn't have to worry about all those liberal arts majors who were running around not doing any Science, but you were surrounded by people who were interested in Science and they were really smart people.

Soyini: So what was it like at a liberal arts college? You said there were few girls in your class, how was that for you?

Patricia: Yeah, there were not that many girls at all. My year in Chemistry, as I said, I was the only girl. The year behind me, there were like 3 or 4 girls. But you know, I got used to working with guys and having a lot of guy friends. But there weren't a lot of opportunities to meet and greet with females because none of them were interested in Science.

When I was in high school in fact, it was discouraged from girls taking physics. I remember being in a grade 11 physics class and being told I didn't belong there because I was a girl. But that was just the way it was at that point, and so I never...which is, you know, it haunts me to this day because my Physics background is not very good, and that's one of the reasons why - I was discouraged from taking Physics. But Biology and Chemistry was okay. I had a woman Chemistry teacher - who was fabulous - in high school.

Soyini: So what did she do for the rest of the high school, did she have any impact in getting other girls interested in Science?

Patricia: I don't know. I hadn't thought about that. At the time when I went to University, a lot of the girls went to University to get what's called their 'M.R.S.' - they went to get married. That's why they went to University and so they went away to school, to the big schools, to schools outside of Thunder Bay, to meet their future husband. And so that wasn't an interest of me; I went to the local school and I had fun but I learnt the science. It was...it gave me a

good enough background in Science so that I got into MIT and that's...in the end, that's all that counts.

Soyini: So what was your first day like at MIT? What were your expectations when you came here?

Patricia: Well, the thing you've got to remember is that I went to graduate school here, which is totally different than an undergraduate. Now the reason it's totally different is that when you go...when you go to graduate school, you are going to school to learn how to be a researcher. And so in graduate school your first year is spent taking classes, teaching and then the rest of the time is spent in lab doing research on your thesis project. So there is not a lot of opportunity to get out and meet people outside of your immediate lab group. So basically, you earn a stipend and your stipend is used to pay your tuition and give you a little bit of money to live on and you do research and that's your job. And so, when I came to MIT, I thought, well this is cool; there were lots of people here, they were all interested in Science. And in fact when I came here in the fall of 1989, my incoming class in chemistry was, I think 61 people, and of that 61, 21 of them were girls. So for me, I was being surrounded by a lot more females, than I had ever been in a class.

I taught...I TA'd 5.11 and that put me in a group of 21 TA's and it was fun because there was...I don't know, maybe 5 girls that ... 5 females that were TA'ing and it was fun because, you know, there were ... there was a group of us that could go to classes together, that could hang out, that could teach, and we could have fun. It was... for me it was the first time being around a lot of people who had similar interests and a lot of females who also had similar interests.

Soyini: Okay. In your opinion, how did the women at MIT compare to the men, socially and academically?

Patricia: We weren't treated any differently.

Soyini: Oh. That was good. So it was different from what you had been accustomed to before.

Patricia: Yes. Different, yes. But, you know, there are still, there were areas that you didn't... there were still areas where there weren't a lot of girls, like for instance I was in the Biological Chemistry division and there are still not a lot of girls in Physical Chemistry. So there's 4 areas of Chemistry; there's

Biological, there's Physical, there's Inorganic and there's Organic. Physical Chemistry is considered the hardest type of Chemistry and there weren't a lot of girls in that division but there were a lot in Biological and in Organic and in Inorganic. So it was fun, it was neat.

Soyini: So, why do you think the girls stayed away from the hard Chemistry?

Patricia: Well they stayed away from the Physical probably because it... Physical Chemistry is a lot of Math, and a lot of Physics, and unless you have those backgrounds, you don't do well in that. And for me, that would have been a horrible decision; to go into Physical Chemistry, 'cause I didn't have the Physical background.

Soyini: Was there a good sense of community among the women at MIT then?

Patricia: Yes. The chemistry department at MIT does a really good job, of fostering a lot of women interactions. There is...there still is, a 'Women in Chemistry' so you could meet monthly on luncheons, and meet and talk to other female graduate students and talk about things that they were having problems with. So there was a ... there was the support built in, which was nice. The chairman of the department, when I was there was Bob Silbey and he was very much aware of how the women in the department needed role models to be able to...to decide to go into Chemistry and to stay in Chemistry. In fact, they had a program where we sponsored a seminar where, for a weekend, we invited a whole bunch of Chemistry alumni females back, and we found out what they'd been doing with their lives since they had graduated from the department. And so, you were able to find out; you know, people who were in the Chemistry department in the 60's, where there was only one girl in the class, and how they were able to survive. 'Cause that was, to me that was completely foreign, because, you know, I was here at MIT and there were 21 girls in my class. It was very hard for the women in the 60's to be in Chemistry when there was 1 girl per class. So if you didn't like the girl who was the year below you, you were stuck, you didn't have any female friends! So, it's a lot better than it was.

Soyini: Were you satisfied with the level of development you got at MIT as a Scientist?

Patricia: Yes. I learned a lot. The one drawback was that once you got in to the lab, you were under the guide of just a single professor and if you didn't have a good

relationship with that professor, you could get into trouble and you could get yourself lost. Luckily, I didn't have that problem and there was also... the people that I worked with in lab, they gave a good support and I had good mentors. So, we were able to get along and learn a lot of interesting Science.

Soyini: And being female didn't hinder this development at all?

Patricia: No, no. No difference.

Soyini: Do you think MIT adequately prepared you for your future career?

Patricia: It provided me with opportunities to develop as I see fit. It's an interesting question because MIT focuses on the research and that is an important aspect of your development. What they don't – or at least in the Chemistry department – what they didn't focus on, is teaching. They didn't emphasize...they don't teach you...they don't teach you how to teach, that's not part of the development as a Scientist; what you are rewarded for, is your research skills and being able to publish. But the group that I worked for, William (Bill) Orme-Johnson's was ... had financial difficulties, he was having problems getting grants. And so one of the things that the graduate students had to do is that they had to teach extra terms. Usually, you only taught for your first year; your first fall and your first spring; but I had the opportunity to teach an additional 2 times. So I got exposure to other professors and their teaching styles, and also an opportunity to work with different professors. So, in that sense, I had a lot of teaching experience when I finished. When I finished...I defended my thesis at the end of September and I was given the opportunity to teach up at ESG for that whole fall. So I spent a whole term teaching up here full-time before I started my Post-Doc.

Soyini: So when did you decide you didn't want to be a doctor?

Patricia: An MD doctor?

Soyini: Yes, a MD doctor.

Patricia: I probably decided that after 2nd year or 3rd year University – during my 3rd year University. Because at that time there were people who were PreMed trying to... trying to apply to medical schools and it's incredibly competitive to get into Med School. And, you know, the hoops that they were jumping through,

it...to me, it just seemed like a waste of time. I was not...I was not interested in that. And when it took, you know, when it took what you ...what you looked at, what you had to do, to become an MD. At that point I didn't think that it was worth it. I figured I could make an impact, as much as I wanted, by doing research on medical issues.

Soyini: So what career exactly did you have in mind when you were going into MIT?

Patricia: I wanted to become a professor and teach at a small liberal arts college.

Soyini: Oh.

Patricia: That's what I wanted to do.

Soyini: Which one do you enjoy most; Biology, or Chemistry; or Bio-Chemistry?

Patricia: I enjoy the interface. I enjoy looking at Chemistry from a Biology standpoint and looking at Biology from a Chemistry standpoint. It's not so much Bio-Chemistry as it is in between the two areas; where you can take your Chemistry knowledge and apply it to Biological problems.

Soyini: You talked about your work in the lab a lot before. Do you enjoy your labwork?

Patricia: Yes I do, I enjoy solving problems. I like to be given a problem to solve, I don't like coming up with those problems; which is why becoming a professor at a place like MIT would be difficult for me because I don't like having to think of those problems to solve.

Soyini: Is there a reason why you don't like...

Patricia: Well let's see, it's ... to be a professor, you have to come up with projects to work on. And you have to have one area of science that just is so interesting that you would live and breath that. And I don't live and breath a certain area of Science. I like all areas of Science. I enjoy being given a problem to solve and ... but I don't enjoy thinking of an original problem to solve.

Soyini: So you enjoy research, but you think you want to focus on education as a career?

Patricia: That's right. Yes I do.

Soyini: How did that choice come about?

Patricia: That choice came about because I looked at the professors at MIT and to be able to do research at a 'high-powered' place like MIT, you have to dedicate your life to Science and I'm not interested in that. I'm interested in having a life outside the lab, about having a family, being able to explore outside interests. But as a junior faculty member, at a place like MIT, you can't do that. You have to live and breath your Science for like the first 5 years of your career, which for me would be right now. And for me...from my point of view, that is like the prime child bearing ages. So if I ever want to have a family, this is the time to have it. And it's very difficult to have small children and get tenure. In fact it's darn near impossible.

Soyini: Do you know anyone who has managed to do it?

Patricia: At MIT?

Soyini: Yes.

Patricia: There are a few people. There's a woman in Physics who did it; but in Chemistry, it's still very difficult. Biology, it's possible- Biology is a little...the biology department is totally different from the Chemistry. The Biology is considered to be a 'soft' Science and so it's a little bit...it's a lot more...it's populated by different types of people. And so, I think it's possible to become a Biology professor and have small children but the Chemistry department is still very much an 'Old Boys Network' and it is very much "I had to do this to get tenure so you have to do this to get tenure."

Soyini: Okay. Most people are anxious to leave College, yet you want to stay on, permanently as a teacher. Do you have any concerns about remaining in the College environment?

Patricia: No. I don't. I like it. I like being surrounded by people who – for the most part – are interested in learning; who are interested in Science, and who want to be there. If you teach at say a high school level, there's a lot more apathy and a lot more students who are only there because they have to be, and not because

they are interested in the topic. At the College level, you have people who are taking classes – for the most part - because they have an interest in the topic that they're taking.

Soyini: Okay. So you've found that at MIT, you've found that students are interested?

Patricia: Yes, they are, and they're smart. They ask lots of good questions and they keep me on my toes and keep me thinking about different ways to present material.

Soyini: So is that the main reason that you decided to become involved in education?

Patricia: Yes.

Soyini: And what sacrifices do you think you'd have to make to teach solely, instead of focussing on both teaching and research?

Patricia: Well at MIT, you can't...it's very difficult to focus strictly on teaching because MIT's the type of place where you have to do both teaching and research. They don't...they currently don't really have a means of focussing only on teaching in a tenure track position. At ESG, I'm currently in what's called a non-tenure track position and so, I'm an instructor. And so, I would never, ever become a "full professor" because that's considered tenure track. It's difficult to have a strictly teaching position and be able to make enough money to live and so I do my research under the guise of Professor Robert Rosenberg in the biology department to supplement my teaching salary.

Soyini: Do you think you would be happy teaching at another College where teaching is more emphasized than here?

Patricia: Maybe. I say maybe, because it depends on the type of student that goes to that particular school. It's not much fun teaching to a group of students who are not interested in learning. It becomes...in that sense, it becomes more of a chore, than it does a ... enjoyment. I enjoy teaching. I enjoy teaching more than I enjoy research which is why I'm currently doing what I'm doing now. But it would be...it would require me to hunt around and find the perfect match for me and right now there is no need for me to hunt. I'm enjoying what I'm doing so, I probably wont leave MIT, unless I'm forced to.

Soyini: So what do you see yourself doing at MIT in the long term?

Patricia: I see myself being at ESG for a while. I can see myself teaching at ESG, continuing to teach freshman Biology and Chemistry. It's nice 'cause MIT and at ESG, it enables me to be able to make a contribution to the freshman year and the freshman program at MIT, in a way that I like to. And it does it in a way that I don't have to be a professor.

Soyini: Are there any high points or low points you can think of, about your teaching experience so far at MIT?

Patricia: Teaching? Umm... I can't think of any off the top of my head – it's always fun when you're teaching to a group where you see...I like to call it 'the lightbulb phenomena': where you're talking and you're explaining something to the student and the light clicks on and they understand what you're saying for the first time. That's always lots of fun, being able to see that – it can be very frustrating if you're trying to explain something to someone and they don't get it and it's not...you're not able to explain it in such a way, that it makes sense to both parties and that's...that's the most frustrating part about teaching. I don't have a particular instance where I can't explain it, but it's been...it's been fun this year teaching thermodynamics in 5.11 because, for the first time, I can actually understand and explain it in such a way that it makes sense, which is kind of cool for me.

Soyini: Do you see yourself impacting MIT in a particular way – have you thought about what type of impact you'd like to have on the students here?

Patricia: I'd like to be able to inspire other people to go into science and to be able to see the importance of studying science and why it is important to be able to have a general background in Chemistry or a general background in Biology, because it affects what you're going to be doing. Which is kind of interesting because, my sister is an Economist and she hasn't taken Biology since high school and it's...it's fun to hear her try and explain Biological and Chemical problems because she has no clue. Whereas my brother is an Industrial Engineer and so, he probably hasn't taken Biology for a while, but he certainly understands the Chemistry of things and it's...it's fun to listen to him talk about Biological problems.

Soyini: So do you think that the fact that you're a woman will affect your professional life at MIT?

Patricia: In this day and age: no. It's not going to affect it because there are more and more females around in Science and a lot of time what happens is that you'll get hired because you're a woman, because of diversity. But once you get your foot into the door; you get promoted because of who you are, not because of what you are. And so, you know, sure that initial hiring is probably because you're a woman but you can make or break your own career.

Soyini: Is there anything you wish to say to women who wish to study at MIT?

Patricia: Go for it. Enjoy it. Get the experience.

Soyini: What about Science in general, women who want to study Science...?

Patricia: I think you should look at what your interest are and look at what you enjoy doing. And if Science is something you enjoy, you should come to a place like MIT and get exposed to all the different areas of Science, so that you can find out what particular part of Science interests you. In that sense it's kind of neat how the freshman year here at MIT... you have to take certain courses and so you get a broad exposure. It's a pain and a half if you're a course 6 and you have to take Biology, but it's useful because it gives you exposure to those things. You know, I have never had a formal course in Molecular Biology. When I was going to school, it was something that was too costly to do. And it was fun to be exposed to those kinds of things at a place like MIT. There were parts of Science that I'd never even heard of, and, a lot of it is just exposure and finding out 'ooh that's neat', 'that's kind of an interesting problem to look at'. At a place like MIT, you're going to get exposed to all those different things and if you have an opportunity to be exposed to those things you may find that 'wow, maybe course 6 is not the place for you, maybe there are other areas for you to be'; but you have to think about that.

Soyini: Do you think that there are many teachers like your old Physics teacher around there still, that limit females being in a particular subject or a particular field?

Patricia: No. I don't think...I think that nowadays, that there are... enough awareness of that type of attitude and how it's discriminatory and that...I don't think that you would have the opportunity to be exposed to a teacher like that. It would become a lot more obvious that that was happening. But when I was going to

school in the early 80's in a small town, it wasn't...it was just something that was accepted. I don't think that type of attitude is accepted now.

Soyini: Do you think that you might have enjoyed Physics?

Patricia: I think so. Another thing that I was...I think if I had been exposed to Physics, I would have understood what an engineer did. I had no idea what an engineer did and engineering was a big department at my school. I think if I had been exposed to physics, I would have understood and thought about being an engineer – cause I like problem solving and a lot of engineering is problem solving. I don't know whether I would have made a good engineer but, because I didn't have the opportunity to be exposed to it, I didn't know.

Soyini: But within your lifetime you've seen women... the opportunities for women develop.

Patricia: Yes.

Soyini: Well, thank you for agreeing to this interview; is there anything else you'd like to say?

Patricia: No. I can't think of anything else. Can you think of anything else?

[END OF INTERVIEW]