

Interviews of the Margaret MacVicar Memorial AMITA Oral History Project, MC 356
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Holliday (Holly) Heine – class of 1967

Interviewed by Colette Abah, class of 2015

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Margaret MacVicar Memorial AMITA Oral History Project

Holliday (Holly) Heine (S.B. Biology/Life Sciences, 1967; Ph.D. Biology/Life Sciences 1973) was interviewed by MIT undergraduate Colette Abah (S.B. Mechanical Engineering, class of 2015) on October 27, 2016, at the Women's Independent Living Group (WILG) on the MIT campus. Heine was a student at Wellesley College before transferring to MIT. At the time of this interview, she had recently retired as Corporate Counsel at Cambridge Sound Management, LLC, a commercial sound masking company.

ABAH: I'm here with Holly Heine for the MIT Women's Oral History program. How are you, Holly?

HEINE: I'm very well, Colette, and I'm really excited to talk to you.

ABAH: Nice. First, I would like to hear a bit about your childhood. Tell me about your family, where you grew up, how you grew up, and how that helped to shape the person who you are today.

HEINE: [LAUGHS] Wow, OK. Not very broad question!

I grew up in Baltimore, Maryland. I was born in 1944, and I am the oldest child of what was eventually a family of six children.

ABAH: Wow.

HEINE: I went to a private elementary school in Baltimore City. And then I went to a private girls' high school in Baltimore City. The senior year of high school, my family applied for and got the opportunity to host the foreign student at our high school that year, a young lady from France. She lived with my family my senior year.

And then came time for me to go to college. I applied to Wellesley, and I got into Wellesley, but my family didn't think they were going to be able to find the money to pay for my four years. And so I also applied and then got into Goucher College in Baltimore. It turned out that my family-- my mother, through a lot of research-- found a partial scholarship for me sponsored by the Huguenot Society of the United States--- and my parents decided at the last minute that I could go to Wellesley.

ABAH: Wow. So, how come you qualified for this scholarship?

HEINE: My mother did the research to prove our Huguenot ancestry.

ABAH: Oh, wow.

HEINE: My mother was descended from French Protestants, known as Huguenots, who fled religious persecution in France before the declaration of the Edict of Nantes in 1598. This declaration ended the religious wars in France. My mother's ancestors settled in what became Maryland.

ABAH: That is too interesting!

HEINE: Yeah, and it was very interesting because it was one of the things she had heard about through her mother, and her mother's side of the family. But she had to then go back and document it all.

I was very fortunate to be able to get that scholarship. So, then I went to Wellesley, and the third weekend of my freshman year, I went to my fourth mixer since school had started, which was my dorm mixer, and I met the man who's now my husband. [John "Jack" Heine, S.B. Mechanical Engineering '62, S.M. Mechanical Engineering '64 and Ph.D. Mechanical Engineering '66; founder of Cambridge Sound Management, LLC]

ABAH: Oh, wow.

HEINE: So that was the start of a long, long life together.

ABAH: Nice. Was he a student?

HEINE: He was a first-year graduate student at MIT, and he had driven out to Wellesley in his little Volkswagen Beetle, powder blue [LAUGHS], to come to this mixer. And we just hit it off.

ABAH: Nice.

HEINE: And so we got married two years later. And I transferred from Wellesley to MIT.

ABAH: You got married in your junior year?

HEINE: Well, after the end of my sophomore year.

ABAH: Wow.

HEINE: Yes.

ABAH: Really interesting.

HEINE: Yeah. And I transferred to MIT after getting married. And so then I finished two years of an undergraduate degree in Biology/Life Sciences, and then I went on to graduate school, also at MIT.

So, I think one of the influences of my childhood was about wanting to get educated and to do things. My mother always wanted to be able to do more with her life. She was a frustrated homemaker. And to some extent, by watching her frustrations, I decided I would try to actually follow through.

I have kind of an odd memory. When I was probably in 10th or 11th grade, I became aware that the wife in a couple who lived nearby had gotten a Ph.D. And I think-- I can't even remember now what field it was in-- but that impressed me so much, I decided that I wanted to go on and do the same with no thought as to field at that point.

ABAH: ...and get a Ph.D.!

HEINE: Right. And so, during graduate school, I did. After my undergraduate degree, I continued on to graduate school at MIT, and I got my Ph.D. in 1973.

While I was at MIT in graduate school, it was just a very exciting time in biology, with the discovery of the structure of DNA and the establishment of the new field of molecular biology. It was while I was a first-year graduate student, actually, when [biologist and physician, eventually Institute Professor Emeritus] Salvador Luria – Professor Luria – won the Nobel Prize in medicine [1969].

ABAH: Were you working on the--

HEINE: I wasn't working with him. But it was exciting for everyone because we all knew how-- what a great professor he was. I had him for some courses. He was one of the first people who figured out how antibiotics work to control disease. And he always, at every opportunity, ranted about how antibiotics should not be overused, as they are being overused today. He showed us how if you didn't take all of your dose of an antibiotic, or if you fed antibiotics willy nilly to animals used for food, you could allow for the selection of harmful bacteria that were resistant to the effects of that antibiotic. And that's why we have all these antibiotic resistant bacteria today.

ABAH: Wow.

HEINE: He was definitely right on the money.

So then, after I finished graduate school, I worked for one year as a lab instructor in the first level biochemistry laboratory course at the time. And then that year, I

had my first-- we had our first daughter. She was born in 1974. And we turned into a two-career, two parent family, needing to take care of our kids.

ABAH: How was that?

HEINE: [LAUGHS] It took a lot of planning, a lot of work, and a lot of sleepless nights. We lived in Westgate as married students and through the first two of my graduate school years. But then when I started the research for my thesis, we were appointed junior house parents for McCormick Hall.

ABAH: Did you have access to daycare?

HEINE: We used somebody in the Eastgate apartments. And then we lived in McCormick for-- I think I'm getting this a little mixed up because we lived in McCormick *before* we had our first child. That's true ... right [LAUGHS]. So it was in '69 when we moved into McCormick. And then Dorsey was born in 1974, the year after we moved out of McCormick. Right.

ABAH: I did have a question about your transfer from Wellesley to MIT. Was that an easy transition? I mean, you talked about a scholarship at Wellesley. Did your scholarship also cover your costs at MIT? Or did you have--

HEINE: We actually didn't need that. My husband's fellowship, his grant, paid for my undergrad costs.

ABAH: Wow! That's great.

HEINE: [LAUGHS] Yeah, yeah. I mean, that was really pretty wonderful. Yes, we could be completely self-sufficient from our parents. And when I-- the actual transfer was fine. And I got-- Well, MIT didn't know what to do with all of my humanities credits from Wellesley, so they sort of plugged them in here and there and gave me total credits. I got credit for-- I don't remember-- 10 units of advanced independent study to give me the humanities units I had earned at Wellesley. But I had not even gotten credit for any of the math that I'd taken at Wellesley. We hadn't even come up to 18.01. So I had to start back--

ABAH: All over.

HEINE: -- yeah, at 18.01, and then, also, 8.01 Physics. I hadn't had that level either. And my husband taught me and tutored me. He helped me a lot with 8.01 especially. He would tease me, because there was a transition at that point to what I guess one would call grade inflation. There was a concern that the faculty had been grading too hard because graduating seniors were not getting into graduate

schools where the faculty thought they should. And I sort of got the benefit of that and had better grades than Jack had received!

ABAH: Good [LAUGHS].

HEINE: I had very interesting experiences in terms of being one of a few women when I transferred. At that point, there were 10% women in the undergraduate body. However, there were almost 30% women in the biology department.

ABAH: Wow.

HEINE: So, it felt like a lot more comfortable men/women ratio in the Biology Department. But I still remember my first day of 7.01, the introductory biology course that I took. I went into 26-100 by myself, sat down in some spot, and this guy-- some guy sat down next to me and said, "You're new here, aren't you?" I said, "Yeah," but by that point, he saw my wedding ring.

ABAH: Oh!

HEINE: [LAUGHS] And he kind of meandered away.

ABAH: Right—popular!

HEINE: So, I felt like I was finally getting a chance to really push my brain when I got to MIT. That felt very good.

ABAH: So, how did you decide on biology? Was that what you were going to major in at Wellesley?

HEINE: I was going to major in chemistry at Wellesley, but I had a chance with the transfer to switch. Biology was starting to really interest me. I focused on biochemistry, and I definitely used my chemistry background when I wrote my Ph.D. thesis.

ABAH: And at MIT, you got involved with founding WILG, right? What other activities were you involved in? As a married student, did you get a chance to really get plugged into the student body?

HEINE: Not really. Our friends were more my husband's graduate school friends. Working on the setting up of WILG didn't happen until I finished graduate school and was in the Dean for Student Affairs Office. I sang in the choral society, which, I guess, is still an active singing group. I really liked the students in my classes. But I really didn't do much in the way of student activities.

ABAH: Can you think of an anecdote that pops out when you think back into your MIT experience or your undergrad experience? A defining moment, or--

HEINE: Well, I was kind of at a disadvantage in biology course work in the beginning. And I realized this when I got my first test back from the laboratory-- it was a biochemistry laboratory course. I was taking a biochemistry lecture class and laboratory course with Dr. Gene Brown, who later became my thesis advisor, head of the department and also dean of the School of Science. And in the first test for the laboratory course, I got a really bad grade. Professor Brown just was so disappointed. I was very conscious of how I needed to figure out how to study this course material better, how to handle-- really figure out what was going on, because that was going to be my major. It was really important to me. And so in terms of helping me focus, I think that was a turning point.

ABAH: Nice to have a turning point early on--

HEINE: That's right.

ABAH: --rather than later.

HEINE: There was one thing that was just a fun course, and representative of the broad spectrum of subjects at MIT. As an Institute Requirement, you had to take multiple subjects in the humanities, and I took a course in the Music Department. The professor picked some of us to sing a little quartet to illustrate a point he was making. Of course, I think I was one of very few women in the class. So I sang the alto part in this piece. It was-- it just was fun.

ABAH: Nice.

HEINE: Yeah.

ABAH: One of your favorite classes, do you think?

HEINE: It was a nice relaxation. I don't know what my favorite class was.

One of the things from that time that you all might not know was that there was no athletic requirement for women.

ABAH: Oh!

HEINE: And the reason for that was because there was no locker room for women [LAUGHS]. Professor Sheila Widnall, a very prominent professor in the Aero and Astro Department, who much later served as Secretary of the Air Force under President Clinton (1993-1997), eventually took on this issue, after I finished my

Ph.D. and was working in the Dean for Student Affairs Office. Professor Widnall was Chair of the Faculty from 1979 to 1981, and she formed and served on a committee to look at establishing an athletic requirement for women. The solution the committee reached was to tell the Athletic Department that the excuse of not having a locker room for women was not acceptable.

ABAH: Absolutely not!

HEINE: And so they made the Athletic Department carve out part of the men's locker room and make a locker room facility for women. And then women--

ABAH: --got access.

HEINE: Got access, yeah.

ABAH: Nice, wow.

HEINE: And so that was just a wonderful breakthrough because it meant not only was there then an athletic requirement, which allowed women to be exposed to all of those wonderful opportunities--

ABAH: Varsity--

HEINE: --and doing varsity sports and just the recreation part also, it allowed staff and alumnae and anyone who used the facilities to have a locker room to change in.

ABAH: Yeah, definitely. So do you think taking advantage of the center, was this an important part of your life?

HEINE: Later, yes. And I don't even remember when we did all of this. But I used to play squash with my husband on the squash courts. Also, I learned to ice skate on the MIT ice rink from Bonnie Kellermann, who is also an alum and a friend and was a dean in the Student Affairs Office for many, many years. She now works on the capital campaign and is a prominent person in the Alumnae Association and the Boston Area MIT Club. In addition, she's a figure skater who gave lessons for a long time. She gave me lessons--

ABAH: Nice.

HEINE: --and that got me ice-skating. I was really glad to be able to do it. I have a weak ankle, and I now wear a brace to deal with an over-pronation problem. But I was never a great skater because even very stiff skates weren't quite--

ABAH: Comfortable.

HEINE: --comfortable. Yeah, well, they weren't quite strong enough to keep me really straight. What else did we do? Play tennis. I didn't play any team sports. It was more that individual stuff.

ABAH: OK. So in terms of timeline, you said when you were in your freshman year at Wellesley, your now husband was just starting graduate school.

HEINE: Right.

ABAH: And then you went on to do a Ph.D. So, would you guys have finished your doctorates around the same time?

HEINE: No. He finished before I did. So, he finished in '66 and then started working at a company called Bolt, Beranek and Newman [later called BBN Technologies], which was out in Fresh Pond, Cambridge. And I didn't graduate then -- the biology degree took longer. I graduated in 1973.

ABAH: OK.

HEINE: And so when we lived in McCormick, I was the senior tutor. And Jack called himself the HOST, or the Husband Of the Senior Tutor.

ABAH: Wow, senior tutor. Is it like the current version of the RA?

HEINE: I think so. I think so. But we were more like junior house parents.

ABAH: OK.

HEINE: And in fact, one of the years that we were at McCormick was between housemasters. And so we did all the entertaining that the housemaster would've done and ran the study breaks and stuff like that.

ABAH: That's interesting.

What was your support system while at MIT? MIT can be extra stressful. You said your support network was mainly around your husband and your husband's friends, and the friends you had-- So, what would you say constituted your support system while doing your undergrad and your Ph.D.?

HEINE: I was in a very good lab group. I credit Professor Brown with being very supportive of undergraduates. And I was the first woman-- I mean graduate student-- I was the first woman graduate student he'd ever had.

His lab was very eclectic. We had an undergraduate working there. We had graduate students. We had post-docs. And there was one graduate student whom he brought into his lab when that person was having trouble with another professor in finishing up. And the department agreed that this graduate student should be helped to get on with his life--

ABAH: [LAUGHS]

HEINE: --and so Professor Brown brought him into our lab and gave him a different topic and so forth. Professor Brown and his wife, Shirley, had us out to their home lots of times, and we all appreciated that very much. There also were other supportive professors in the department at the time. It was very good environment for me.

ABAH: Right. So, you told me you did your Ph.D. in biochemistry. Out of your Ph.D., did you get what you expected to get out of the experience of getting a Ph.D.? Did you go on to continue the research you did in your Ph.D.?

HEINE: No. My Ph.D. research was focused on just identifying one that catalyzed the reaction of one step in the pathway toward folic acid biosynthesis. Folic acid is one of the important vitamin-like compounds in the synthesis of DNA and also neural tubes. When I think back to how primitive our methods of analysis were then - there was a lot of equipment that wasn't anything like as precise as the modern stuff - I am amazed that we got the clear results that we did.

I also got out of that experience that I really was not that interested in a research career, and I wanted to find something else to do. So first, when I graduated, I taught this laboratory course at MIT for two years, and then I decided that I wanted to do a post-doc because I wanted to give research another chance.

ABAH: OK.

HEINE: So, Professor Brown helped me find a position. And I went to a laboratory at the Mass. General Hospital. The work of that lab was based on trying to find ways to control the reactions in cancer. But the approach was to study these reactions in a rat liver model system and study the normal versions of the reactions and then figure out how to try to control them when they were going to get out of hand. So, I had to kill a lot of rats—

ABAH: Oh no! [LAUGHS]

HEINE: --and do a lot of experiments. I was there for two years. And when the paper came out, my work was only related to one or two points in one of the graphs!

HEINE:

After I left the Mass. General lab in 1976, I successfully applied for a position in the MIT Student Affairs Office as a counseling dean, with special responsibilities for women students. Besides advising students, I was also a representative for the office to several institute-wide committees, among which was the MIT-Wellesley Exchange Committee. In the late 60's/early 70's, MIT and Wellesley created an official Exchange to permit students at each school to take subjects for credit at the other. It was enjoyable for me to be able to interact with the Wellesley administration again. However, there was a frustrating side of the Exchange for many MIT women students. Because the number of female undergraduate students on the MIT campus noticeably increased with the Exchange, many MIT male students made it clear that they assumed any females new to campus were Wellesley students!

In 1980, I received a promotion, to Associate Dean, and took over the part of the Office that ran the Freshmen Advising Program. I ran this office for five and a half years. However, by then I had been working in the Dean for Student Affairs Office for nine and a half years and was getting bored. A lot of exciting things had been happening in biology over those years. So, I first negotiated a sabbatical for another six months so that I could take some advanced biology coursework that would help me in this transition of figuring out what I wanted to do.

It was a little humbling. In that fall of '86, I took a laboratory course at MIT that required the course that I had taught earlier as a prerequisite. In no way was I ready for this lab! It was definitely more advanced than I knew about. But I really wasn't aware of all of the exciting work that was being done in the field. So, that was a really good thing for me to do.

And then, in the spring, I persuaded one of the Biology Department's professors, Harvey Lodish [molecular and cell biologist, and founding member of the Whitehead Institute for Biomedical Research], to let me just do some volunteer projects for one of his graduate students so that I could learn some more techniques. And all during that time, I was doing interviews and considering options -- maybe, working in a lab at one of these start-up biotechnology companies. Not in research science, because that wasn't what I wanted, but maybe in some kind of administrative function.

But then, it was at the end of that full academic year that the suggestions about going into patent law came. And that's when I started -- In the fall of '87, I started at the law firm, Fish & Richardson, as a technology specialist. And then I started law school a year later after that (in the fall of '88).

That was when it became really important for me to have a very supportive spouse, because Jack really kept the family together. I was in the evening

division [at Suffolk Law School in Boston], which is a four year program, because you take fewer courses per semester. For full time law school, it's three years.

So, I was going through law school while my younger daughter was going through middle school and my elder daughter was going through high school. She really missed me [LAUGHS], and we're still working it out. Not really, but it feels like it sometimes-- some of those issues still remain.

I'd like to go back and talk a little bit more about my time at MIT, because I really haven't said anything about my involvement with woman students while I was in the Dean's Office. And have you ever heard of AMITA [Association of MIT Alumnae]?

ABAH: Yes. This project is [part of] AMITA.

HEINE: From the Dean's Office position, there were just a lot of committees and groups and things going on, related to woman students or undergraduates in general, that I was involved with. One of these I supported was AMITA, helping to publicize the group among the undergraduate women. AMITA received a request in the late 70's from some of these undergraduates to help them with the formal organization of an independent living group just for women. The committee that formed included Marjorie Pierce, class of 1922, a practicing architect until the day she died and the major benefactor of WILG; Dottie Bowe, a long time administrator at MIT and a great friend of women students who was in the Financial Aid Office at that point; and a number of women professors and other alumnae, and me.

ABAH: I'm very interested in how you managed your family life and being a career woman, so if you could elaborate a bit there--

HEINE: Right. When we were both working, we had-- well, when our children were young, we took them out to family day care. Once they began to go to school, we needed to have somebody in the home after school was over. And so we had a succession of people over the years, finishing up with one wonderful person who stayed with us for years and years.

Our routine was, we would both try to get home at six. And the person who was taking care of the kids would have been taking them to activities after school. When they were little ones, she had supper ready and they were already bathed. In the beginning, we would put them to bed and then eat our own dinner.

As they got older, we would all have a family meal. And so that's how we started the tradition of really trying to be able to all eat dinner together, which we continued all the way until the kids were through high school.

My older daughter is a lawyer--

ABAH: Wow.

HEINE: [LAUGHS] Right. And she's married, they live in Los Angeles, and they have three children. And so when I look at how busy they are and also how much-- because of the advent of cell phones and other quick communicative devices, people's lives are not just during the workday, people are basically surrounded by their jobs almost 24/7.

I don't know how Jack and I would have survived in that environment. I think it's very hard. We were able to do it, but it's very important to try to keep in touch with family or whatever other support systems, like very close friends, you have and do things with them as family, because it's hard. It's hard.

One thing that we did-- we each have a sibling that lives in the Boston area. And all our kids were about, maybe in the same five-year age range. And so particularly when the kids were young and we were all house-poor-- meaning we'd spent our money on our houses, we would have "work weekends." The three families would get together at one family's house and do some projects.

ABAH: And then rotate.

HEINE: And rotate.

And then, we'd share the tasks-- There were one or two people who were in charge of keeping the children busy and safe, and making lunch. And then we'd share doing that kind of stuff. And then we would have a nice dinner together. The kids really remember those times, because it gave the cousins a chance to spend a lot more time together.

ABAH: Looking back, you were describing how you got into patent law.

HEINE: As I was doing my interviewing to figure out what to do next, George Whitesides, previously an MIT chemistry professor I knew who had subsequently moved to Harvard, was the first to suggest the idea of going into patent law to me. I didn't think very seriously about this option at first, even though there were a number of lawyers in my family. However, when Bob Weatherall [former Director of MIT's Career Planning and Placement Office, now deceased] brought up the same idea, I decided to look into it. This was at the very beginning of when patent law firms wanted to take on people who had advanced degrees in the sciences. And that was very fortunate for me, because my Ph.D. was getting kind of old at that point. And if I had come along much later, nobody would have

looked at me. But I was very productive and had a 25-year career in patent law. So, I was very glad to have that change happen at that time.

ABAH: What would have happened if you had waited two more years? Would they have--

HEINE: I would have had so much more competition. Academic positions were getting scarce and other frustrated job seekers were realizing that there were opportunities outside the lab, especially in patent law.

ABAH: Ah!

HEINE: Because people were coming behind me pretty fast.

ABAH: If back in college you knew you would be interested in patent law, would you have done anything differently? Would you have gone on to get a Ph.D.?

HEINE: Well, yeah. Because a Ph.D. was really a requirement, as it turns out. The scientists prefer to work with somebody who has a Ph.D., even if it doesn't mean that much in terms of ability to do patent law. What studying for the degree does do is to allow a patent attorney to understand how scientists think and to know the questions to ask, to get out of them the facts you need for you to be able to write up the patent application.

I found that that career was just perfect for me. It combined the aspects of my earlier training into a more coherent whole. I had the academic training, which was obvious to see, but then I also had the counseling and advisory training, which taught me how to translate things from one world to the other.

And translation is really necessary because what's required for patent documents and what's required for a research paper can be very different. In a research paper, the way you always want to show how the results that your team found are to be believed, is to show that your new results fit in continuity with previous work in the field. You make the case that here are the strands of this line of research going way back in time, and they build on work that's been done before. And no one needs to challenge my results because they follow along behind this established line of thinking in the field.

In patent law, it's completely the opposite. You want to show, here is all of the stuff in the past, but I'm a great inventor. So, I had a look over there in a different direction to solve a problem that other people had not yet been able to solve. Well, of course that's nonsense. But that's what you have to do, because you have to show how what you came up with is not obvious. It was something that you needed an invention in order to figure out. You needed to have an idea

that is different from just progressively doing things in the field.

So, I would help the scientist try to figure out what was unusual about the approach they took, for example, and how they might even have doubted their own answers in the beginning, because often, you do. And so the ways of doing the research that leads to great papers or to a patent are not that different, but the ways of thinking about them have to be.

ABAH: What about getting to that part of your career – going to law school?

HEINE: Applying to law school and getting into law school was pretty straightforward. But then doing all the law school work, you can imagine that put a strain on our family. What I did was two things. Before I started law school, I actually joined a patent law firm as a technical specialist (Fish and Richardson, as I mentioned before). And I spent one year there working on the things that I could do related to the patent applications the lawyers were writing. However, as time progressed it was hard for me to stay at the firm without going to law school. To continue in this new field, I needed to do that. And so I applied to law school after I'd been there for one semester, and started at Suffolk Law in the fall of 1988. I was going to law school at night and working in the law firm during the day.

I went to Suffolk Law School, in the evening division. It's now along Tremont Street in Boston, but it was up on Beacon Hill at that point. I would work until 5:30 or 6:00, whatever it was, and then go up the hill to school.

Then the other law student at Fish and Richardson, who was a class ahead of me at law school, showed me how he dealt with the heavy books and all of that stuff. We pulled apart our books! Basically, we'd take these good law books that are sewn together and basically destroy them. If you take off the cover, you can take sections of them to use at a time – you don't have to carry the whole book around. So, I would take these sections back and forth with me when I commuted on the subway.

ABAH: So now that you're retired, do you have interesting plans, any activities, any goals you want to accomplish?

HEINE: Well, yes, because here's another whole part of our lives. When I was working in the patent law firm in 1999-- Well, a couple years before that, my husband had left his 20-year job that he was just getting frustrated with, and he started to figure out what he wanted to do after that. (Sound familiar?) And he had a couple of years of trying different things. But in 1999, he, with another friend, started a company.

ABAH: Oh, wow.

HEINE: And what they had come up with was an idea for a device that would make an office environment more comfortable to people working in it by controlling the interruptive sound and chatters that you hear. Because when an office is-- for example, if an office is too quiet, you can very easily hear somebody on the phone in the far side of the room, or somebody who's starts up a loud conversation.

But if you raise the background sound level in the office, you can often get rid of these distractions. This is a principle called sound masking. But the current providers of sound masking used very big pieces of equipment, which were put up above the ceiling plenum to make this noise, and the business was basically carried out by consultants, who had to individually devise a separate system for every project.

ABAH: So it produces its own noise.

HEINE: Mm-hmm. It produces its noise, but the noise sounds a lot like air-conditioning noise. And it does allow you to not be distracted by this unwanted sound that you're overhearing. And Jack and his partner wanted to move this field beyond the consulting stage and be able to provide a sound masking product that could be standardized. Their invention was to come up with a really small device – not big, so that it's easy to install - that could be used to put up a system in the whole office. Jack and his partner started a business to commercialize these devices.

ABAH: What was your husband's major?

HEINE: Mechanical engineering.

ABAH: Just like me! [LAUGHS]

HEINE: [LAUGHS] Oh, good! And so they made every mistake in the book. It took several years for things to get going. But by 2002, 2003, things were starting to really move, and they were selling a lot of stuff. They now wanted to apply for their patents. I actually wrote the patent applications at my law firm. And then, since that isn't my field, I also worked with an associate attorney at the firm who could write the detailed description and help with all that part. I was the only one who could write the claims, however, because I knew how to translate Jack's assertions into realistic claim language.

So, I retired in 2011, and then what I did was start working at the company part-time. And I did the stuff for the company related to patents in-house. I did a few

other little lawyerly things for the company also. It was not a full-time job.

But I liked to go in there and see what was going on. It was important to help move things along. They were having some staffing issues at the time, and Jack really wanted to get out, but he didn't quite know how to do it. We solved that problem over the next couple of years by buying out our partners, and then we successfully found a new CEO in the spring of 2014.

Six weeks after the new CEO started, Jack got a useful phone call. He was always getting calls from people who wanted to know if he wanted to sell the company. This was a call from someone who had gotten Jack's name from one of the unsuccessful CEO candidates, who didn't himself get the position but was impressed enough with the company that he recommended it to a private equity friend of his. In the end, they made a good offer, and we sold the company at the end of September 2014.

ABAH: Congratulations!

HEINE: Thank you. So that allowed us to be able to fulfill the dream that we'd been talking about for a long time. We had been talking about where we wanted to live when we wanted to retire. Jack really doesn't like the Boston winters [LAUGHS]--

ABAH: I don't think anybody does [LAUGHS]--

HEINE: But he dislikes them even more than I do. And then, I don't like humidity in the summertime, even though I grew up in Baltimore, where it's certainly more humid than Boston. But Boston can be really bad, too, at times.

We used to visit to our daughter and son-in-law in Los Angeles frequently before they had kids, and one time we decided to go 90 miles west to Santa Barbara for a weekend. Right away Jack and I fell in love with that part of California. And we decided we wanted to build a house there and move there eventually. This process of selling the company has allowed us to do that. And so we're in that stage now.

ABAH: When do you plan to move?

HEINE: Well, Santa Barbara has a lot of hoops that you have to jump through to build a house. And they have a single-family design review board whose standards are pretty strict. So, right now, we have passed the first hurdle, which is the conceptual phase. Now, the architects are drawing up the formal plans. Construction won't even start till the late spring, and the house may not be finished until the beginning of 2018. So, it's a long process. Yes. And so what

either one of us is going to be doing for the other part of our time after we are in this house, I'm not sure. It's really amazing we've been able to start building this house. And we've been traveling a little more. We just came back from a trip to Italy. I can't say anything more about what the other parts of our lives are going to be like.

ABAH: A question I just thought of-- During the early years of his entrepreneurship, were you the sole breadwinner in the house?

HEINE: Yes.

ABAH: How was that?

HEINE: It was-- it was OK. It was OK, but we had to pay more attention to things and how much we were spending. It was a nice feeling, though, to be able to provide that function for the family.

ABAH: And did you guys ever have ego tension? Well, you know sometimes, when the woman is a sole breadwinner, then the guy starts getting insecure. Was there ever built-up tension?

HEINE: There really wasn't. I mean, it was unnecessary as Jack was putting in a lot of "sweat equity" time. Then, once he was able to earn money from the company, he paid himself more than I was earning [LAUGHS]. What was appropriate for a CEO was higher than what my lawyer's salary was. But no, we've had-- we celebrated our fifty-second anniversary.

ABAH: Wow—congratulations!

HEINE: [LAUGHS] Yeah. It's a long way from the very first years. I want to tell you one little story. Back when we were living in McCormick, we were in a one-bedroom apartment with a kitchen. And we cooked our own meals and so forth. The *Boston Globe* was doing a story on married couples in college or married couples in working environment-- I forget-- but there were two MIT couples that they interviewed. And this interviewer and the camera person came to our apartment one morning when Jack had just made muffins.

There was no plan to this, but he had made blueberry muffins. And while the *Globe* people were-- they had just started talking to us, and Jack realized he needed to take the muffins out of the oven. And he just went to take the pan out, and they looked so excited to see this man cooking! [LAUGHS] So, the title of our picture in this article was, "He's the morning muffin man." And I was looking admiringly over his shoulder while he recreated taking the muffins out of the oven. It was adorable at the time, but when you think about it, it's so

condescending! [LAUGHS] Oh, my goodness. But it's OK. We didn't mind.

ABAH: A little clarification: You came to MIT for two years, right, for your undergrad? Were you guys allowed to live together during that time, or were you living in separate dorms at the time?

HEINE: Oh, at MIT? We were living in married student housing--

ABAH: Oh, OK.

HEINE: --because he was a graduate student at that point. We lived in Westgate.

ABAH: Thank you so much for your unusual story.

HEINE: Well, my goodness, I really appreciate your interest. It doesn't sound so unusual.

ABAH: It's a very interesting life you've lived, really. Especially the fact that everything came together in the end. You know, where you used both your biology training and your training at the student dean's office, and had a successful career as a patent lawyer. Pretty interesting.

HEINE: Yeah. What are you looking forward to doing?

ABAH: I'm patenting medical devices. Right now, I'm taking this year off to get some more experience. And I'm currently in the process of applying for my Ph.D. I want to do bio-mechanics-slash-biomedical engineering.