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Interview with Dianna Milewicz

Dianna Milewicz M.D., Ph.D.

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TEXAS MEDICAL CENTER
WOMEN'S HISTORY PROJECT

Dianna Milewicz, M.D., Ph.D.

Interviewed by: Natalie Garza
Date: February 7, 2013
Transcribed by: Michelle Kokes
Location: Dr. Milewicz's office at UT Medical School

NG: This is Natalie Garza. It is February 7, 2013 and I'm interviewing Dianna Milewicz (is that the correct pronunciation?) in her office at the UT Medical School. Can you begin by telling me your full name please?

DM: Dianna Milewicz.

NG: Okay and do you have a maiden name?

DM: McGookey.

NG: Okay. When were you born?

DM: December 16, 1956.

NG: And where were you born?

DM: Toledo, Ohio.

NG: Did you grow up in Toledo?

DM: No my father was a geologist and worked for one of the Petroleum companies and we moved around a lot.

NG: Can you tell me what it was like moving around?

DM: Well I was 1 of 6 kids so I always had kids to play with in my family but it was a little bit tough moving into a new school every year to two years growing up. Then we moved in and out of large cities. We moved from Denver to Casper, Wyoming and then to Farmington, New Mexico, to Stamford, Connecticut. So it was an interesting way of

growing up because I saw a lot of the United States but also lived from small towns adjacent to Indian reservations to the suburbs of New York City so I think I saw a lot of different cultures and of different sort of ways of living and growing up.

NG: What does that mean to you now or can you kind of gauge at this point in your life how that impacted you as you got older?

DM: Well I think it made my... I'm very close with my siblings and that's one thing that it did do is it made our family a very close knit unit and it's something that we maintain to this day also with our children so that the cousins are all very close. I think that it made me very accepting of everybody no matter what their background was. It made me somewhat adaptive, probably more adaptive to change than most people.

NG: So you have siblings, how many brothers and sisters?

DM: I have four brothers and one sister.

NG: Okay. Were there expectations of you as a child of what you would do perhaps after high school and things like that?

DM: Well I think... my father was a scientist so he raised us to sort of think like scientists. He also was always sparking our curiosity. He would take us on road trips to go and see geologic formations and then talk to us for hours about how they were formed and what process these occurred and what the compositions of rocks were and so on. So I was raised in an environment where you always sort of questioning the world around you and how it got there. Then my mother was very intent on my sister and I both having a (my sister and me) having a professional career. When I was a child in the early 60's I can remember being in first or second grade and at that time I wanted to be a nurse and my mother saying to me, "Well Dianna you're really pretty smart maybe instead of a

nurse you can be a medical technologist.” So it still was a very early era when the assumption wasn’t that a woman would go from a nurse to a doctor. But you know, to something a little bit more technically oriented than nursing. So but by high school I knew that I wanted to be a doctor.

NG: Oh you knew already?

DM: Yes.

NG: Why? What made you want...?

DM: I was just fascinated by biology and I wanted to do a profession where you were interacting with people but mostly it was a fascination with biology?

NG: Did your mom have a degree?

DM: She finished college yes.

NG: Did she work when you were growing up?

DM: She initially worked as a journalist after leaving college but she actually, this was in Toledo, Ohio and she actually got fired from her job when she got married which was I think not an uncommon practice in those days that women were not expected to have major jobs once they were married with the assumption that they would start having kids. So part of her pushing us to be professionals was partly the frustration that she had her career cut short.

NG: Did you end up going to high school in the same city? Was your whole high school career in the same city?

DM: We ended up here in Houston and I went through three years of high school at CyFair High School and then the last year I actually went to a special program funded by the NSF (National Science Foundation) for students that were interested in biomedical

research and I did my last year of high school in Philadelphia and it was a special program where I worked in a research lab 2 days a week and then took like college level classes at Haverford and Swarthmore the other 3 days so I was taking college level math and science.

NG: Was this for women only or just for anybody interested?

DM: It was for anybody interested in science but mostly what they were trying to do was take people that had really gotten as much out of their high school as they could and taking them and putting them in an environment to sort of get them interested in biomedical research.

NG: How did you decide to come to Rice?

DM: I really liked Houston when I was here in high school and Rice was a great school and after spending a year in Philadelphia I was really, really homesick (for my family) and so Rice was my first choice as far as where to go and it was a great choice. It's a fantastic undergraduate institution. They have the college systems which means you enter Rice feeling like you are in a warm community, a family based community. So that appealed to me a lot. The irony is that I moved back to Houston and my family moved on to Midland, Texas.

NG: After you started Rice?

DM: Yeah I think I was there a year or two before they moved on. Once again they kept moving.

NG: And you knew then, what you would major in or did you just think general sciences?

DM: No I knew I wanted to major in biochemistry and I knew that going into Rice and that's what I ended up majoring. So with the high school credit that I transferred from my 4th year of high school I finished Rice in 3 years.

NG: Did you find it difficult at all once you started the major? Were you comfortable with the work and everything like that?

DM: I didn't find it particularly difficult. I mean I had to work hard to maintain a high GPA and I ended up graduating with all A's and no B's on my transcript from Rice. But and so I did work very hard but at the same time I think I got a lot of out of college socially. I did spend a lot of time having fun too.

NG: Were there many women in the major?

DM: No not many at all.

NG: Did it leave any kind of impression on you that there weren't women or did you have any kind of mentoring?

DM: Not really. There were enough women that you didn't, you had other women to talk to and study but most of the people that I studied with were coed groups that were predominantly male. I ended up, my senior year working in the lab with Kathy Matthews who went on to be the dean of the School of Natural Sciences at Rice and she was a great role model. She was a very good scientist and at the same time she was very feminine. She used to wear these beautiful floating large skirts into lab and I just thought, "Oh my gosh I want to be like her when I grow up, be a scientist but at the same time be somewhat feminine." It was the era of the big gypsy skirts or whatever. It was the 70's... let's see it was the mid to late 70's and so yeah I just admired Dr. Matthews completely. We're still in touch. I still see her off and on.

NG: That's nice. Did you apply to graduate school right out of...?

DM: Yes I applied to M.D., Ph.D. right out of Rice and ended up going to Southwestern because that's where they had biochemistry, they urged me to go. In fact he [Dr. Schroeder] told me that I should go do my M.D., Ph.D. at Southwestern and specifically work in the laboratory of Brown and Goldstein.

NG: Why is that?

DM: Well they went on to win the Nobel Prize so they were doing very high quality research at the time and this, so Dr. Schroeder was the chair of Biochemistry and he actually was instrumental in working out the cellular pathway for cholesterol synthesis. I mean true pure biochemistry and he was a very good scientist. So he had been following what Brown and Goldstein were doing at Southwestern on cellular cholesterol metabolism. So he actually urged me to go there and to do my M.D., Ph.D. and that's where I went and it was really a good decision.

NG: Then were you doing work on the projects that helped them to get the Nobel Prize?

DM: No the stuff that they won the Nobel Prize for they did before (I'd like to take credit for it) but they did that before I entered the lab. I did work on cellular cholesterol metabolism.

NG: So why did you decide M.D., Ph.D.?

DM: I knew I wanted to do biomedical research. So my work in Philadelphia I was doing work on cystic fibrosis and actually clearance through the nasal passages which is a problem in children with cystic fibrosis and so I just really fell in love with research at that time. In fact, my love of research goes back to my high school experience where one

of my biology teachers worked with me on a high school science fair and I just really enjoyed that research. And he's the one that pushed me to apply for this NSF program that was running in Philadelphia on medical research.

NG: When you were in high school and you said that you knew that you wanted to be a doctor is that what you envisioned? Did you envision that being a doctor could mean doing research?

DM: I think that it kind of came together after this high school science fair project that that's when this particular teacher that we called "Doc Ward" I have no idea if he had a doctorate or not. But he was very good and she sort of said, "These are your options, look at these NSF programs. They sort of outline your options for doing research or doing further research." And at that time they had programs in marine biology, medical biology, and a whole bunch of different types of research programs that you could go and participate in. And they were sponsored by the NSF and so I applied to like 15 of them and got into about 14 of them but then choose to go to Philadelphia because my ultimate interest was medical research. But I gave up one in marine biology in Hawaii which might have been a mistake. There was another one that I got into that was in marine biology in Florida that also looked good. The only one I didn't get into was one where they were doing some sort of high altitude analysis of the flora and fauna in the Alpine regions of Colorado but you had to have like mountain climbing experience. So coming from Houston I don't think... That was probably appropriate that they turned me down (although I did grow up climbing mountains with my family).

NG: How did you come to the decision on your major in cell biology?

DM: Well so when I went to UT Southwestern, Brown and Goldstein weren't taking graduate students in their lab at that time. So they urged me to work in Dr. Richard Anderson's lab and he was in the department of cell biology and he was collaborating with them very closely to work out how cholesterol was taken up by cells and how it moves through the cells. So I worked on Dr. Brown and Goldstein's urging I worked with Dr. Anderson on this joint project on cholesterol transport in cells. And he just happened to be in cell biology.

NG: So would you (and I don't know much about this) but would you say that your decision about what kind of track your career would take in terms of the specializations, was that based mostly on things that you were interested in? Or advice given from others of people you should be working with?

DM: I think it's a combination of both. I think that early in your career you take advice and you move on that but as you go further along you start thinking about, "What do I want to do?" and you sort of meld together advice with more of your own. I mean early on it was my decision to go M.D., Ph.D. but then when people told me where, you know made suggestions as to where I could go for training and where would be a good spot, I listened to them and took their advice to heart. But even like deciding on so I did my M.D., Ph.D. and then internal medicine residency in Dallas and at UT Southwestern and then had to decide on where to go to do my sub specialty training in genetics and at that point Dr. Goldstein urged me to go to Seattle and work with Peter Byers and that's ultimately what I ended up doing. So I always sort of listened to the scientists that were around me as far as what track to take with my career because I can't really, at my level

of training, I couldn't assess the quality of science and they could and you always want to go and try to train with the people doing the best science.

NG: You said you went for internal medicine at first?

DM: Uh huh (in the affirmative).

NG: So does that mean that you were practicing medicine?

DM: Well I did my M.D., Ph.D. and then you go and do your internship and residency and I did that in internal medicine. So I did three years of internal medicine at Southwestern and then you go for sub specialty training (and that could be cardiology or pulmonary) and I chose to do medical genetics. So that's when I moved to Seattle.

NG: Why did you make the decision on medical genetics? Was it because of the advice you are saying?

DM: Well it's a good area to go into if you want to do translational research. With that research where you are taking samples from people into the laboratory and trying to figure out what's causing the disease in that individual and that's really with an M.D., Ph.D. degree that's really where I wanted to do research. I wanted that constant going back and forth between the patient and the laboratory and so medical genetics was a great niche to be in and continues to be a great niche where you can see people where you know they have an underlying alteration in their DNA causing their disease, take their sample back to the laboratory and try to figure out what went wrong in their DNA and that's what I'm doing to this day. So I trained in Seattle with Dr. Peter Byers and the reason I went to... so I got very interested in cardiology as a resident and knew I wanted to do cardiovascular genetic research. I went to work with Dr. Peter Byers to work on a syndrome called Marfan syndrome where they have these individuals with the syndrome

grow very tall because they have overgrowth of their bones. Their arms and legs and fingers are very long and then they have a very specific eye problem but they also have a problem with their aorta which is the major artery coming out of the heart and that just weakens over time and it can lead to an aortic dissection or an aortic rupture if the aorta is not repaired. So it's a life threatening condition if it goes undiagnosed. And so I was just fascinated with the fact that you could alter just one base pair out of 3 billion in the human genome and it caused this profound effect on this person both in their bones, their eyes, and in their cardiovascular system. So I went to Seattle to work on Marfan syndrome with Peter Byers.

NG: And what have been the outcomes of that research?

DM: Well our work along with others proved that the defective gene was a gene called FBN1 and now that gene is being used clinically to diagnose people and then other work has been done to try to figure out the link between the mutant gene and all these different clinical features in these patients.

NG: Your dissertation (I want to go back a little bit) was you said on cholesterol. Is that at all related the work that you did for your dissertation to the research that you ended up doing?

DM: It's not directly related but some of the things that I learned in the lab we use currently in the lab that I'm in.

NG: Can you give an example?

DM: We do a lot of tissue culture and both electron and regular microscopy of cells and that is what I was doing for my Ph.D.

NG: I wanted to know where was the research in the field of cardiovascular medicine or cardiovascular research at the time that you were working on the fellowship in Seattle? Was it all geared towards looking at genetics?

DM: Right so I did a medical genetics because of that it was in that translational niche of research but also because I just had seen a patient with Marfan syndrome and that interested me in the condition. I had seen other patients with genetic diseases including a baby as a medical student I saw a baby with osteogenesis imperfecta and these kids are born with very fragile bones. In fact this baby you would go and pick it up in its bassinette and break its bones by just picking up the baby. And once again they had just found the gene that caused osteogenesis imperfecta and it was this lab that I ended up doing my fellowship in, Dr. Peter Byers' lab. Once again it was just one based pair out of 3 billion in the human genome. That's why I got interested in genetics and then I am just interested in cardiology and the cardiovascular system and decided to do that.

When I went to Peter Byers lab they... Marfan syndrome had been described like in the late 19... I think it was described in 1896 by Dr. Antoine Marfan in Paris. Over the next 100 years, almost 100 years, they had described all these different features and showed that it was clearly a genetic condition that was inherited in families. There was a group, when I was working in Peter's lab, there was a group in Finland that actually mapped where the gene was and the chromosomes. They determined it was on chromosome 15. The approach that I took in Peter Byers' lab was actually to go out and biopsy, get skin biopsies from all the patients in the Seattle area that had Marfan syndrome and then take those cells to the lab and try to look at the proteins and figure out if there was a problem with the protein. This was something that, sort of doing this tissue

culture, the skin biopsies and all that is stuff that I had learned during my Ph.D. so it was easy to actually get the project up and running.

We determined that a protein called Fibrillin one was actually clearly defective in all these cells that we explanted from these patients. So we published that at the same time that they published that the FBN1 gene had that mutation, had mutations in it. And so putting this story together it was clear that this was the causative gene. I got lucky during my fellowship because we put the data in that the Fibrillin one protein was abnormal in all these skin biopsies of patients with Marfan syndrome. We put it in for presentation at the American Society of Human Genetics meetings and they had selected it as one of their big plenary talks the year I was looking for a job at the end of my fellowship. So I had lots of job offers because I had given such a prominent talk at the genetics meeting. I got very lucky!

NG: Then why did you decide Houston?

DM: Well, during that time of my residency and fellowship I met and married my husband and he was finished and he is a surgeon. At the time I was doing my subspecialty training in Seattle he was in Oklahoma City finishing up his pediatrics surgery training and we were just flying back and forth about every two to three weeks to see each other (mostly I was coming to Oklahoma) because his call schedule was like every other night. The other thing about medical genetics is there is no, there is few to very few emergencies so there's essentially no calls for medical genetics which makes it a very nice subspecialty to go into if you really want to focus on your research. We had gotten married living apart and then I actually got pregnant so I finished up my fellowship and moved to Oklahoma City for about three months where my daughter was

born, my first child was born so she's an Okie. We moved to Houston about 6 weeks after she was born. During the time I was pregnant we were interviewing for jobs and we were interviewing jointly and like I said I got very lucky that I had this prominent talk at the genetics meeting. So all of the department chairs of genetics knew who I was without even looking at my CV and then there's always a need for pediatric surgery. It's a subspecialty where they are always hiring. So we had lots of very good job offers. It came to, and my husband is from New York City and he really wanted to go back to New York City, and I'm from Houston I mean I really liked Houston from my high school and from Rice. I did not like Dallas and so it was a compromise so we came to Houston and my daughter was named Rachel instead of Helen. I wanted her to be named Helen.

NG: That was the compromise!

DM: After my grandmother and he wanted her to be named Rachel after his half sister that died in a Holocaust camp.

NG: Oh okay.

DM: And so we compromised. They're called marriages! And she is definitely a Rachel! She's 21 now and she is very much a Rachel. I have a cousin and she has a cousin that's named Helen so once we didn't use it the next girl born was named Helen.

NG: How was that trying to balance having a family and doing this work far away from your husband and things like that?

DM: I think that we were both extremely busy and so it wasn't the ideal situation but I don't think he would have had that much time to spend, we wouldn't have had that much time to spend together even if we had been in the same town. I think it was tough on both of us but it wasn't undoable and that's what I sort of advise my trainees, my mentees

right now, that it's not the end of the world if you have to live apart in separate cities for a couple years. You can still come back together and have a very long and stable marriage.

I was also fortunate because I made some very good friends in Seattle that supported me along the way and these were all women. So it was some other women in the fellowship it was the secretary that worked in Peter Byers' lab. She and I became very close friends. It was the woman that I was renting an apartment that was on the first floor of this very large house in Seattle and the woman that lived upstairs was very supportive. She was always like making sure I had social things to do. She would set up blind dates with me, but she would tell the guy I was engaged. If she knew she had a friend that needed like a date for a charity event or something she would arrange for me to go with them so that I wasn't sitting home on Friday and Saturday nights, but then she'd make it clear to the person that I was engaged and that this was non-romantic.

One of those dates she set up was with a guy that came to Seattle from Alaska for some big charity ball and he ran some big car sales company up in Alaska. He showed up to pick me up for the date and he was like 6'7" and he had a medical alert bracelet on and he looked very good in his tux but so we sat down to have like a glass of wine before we went to the dinner to sort of talk to each other. A few minutes into it I said, "I'm sorry I'm working on a syndrome called Marfan syndrome and I notice that you are very tall and you have a medical alert bracelet on do you have Marfan syndrome?" It turned out that he did. It was really a small world story because it's not that common of a syndrome and he had had a dissection and had his aorta repaired and he actually entered my study.

NG: Oh good!

DM: Way back when I got a skin biopsy from him on one of my trips to Alaska so anyway. Yes I had some very good friends that sort of watched out for me and made sure that I wasn't too lonely. And those friends are still my friends to this day.

NG: How have things changed in the Texas Medical Center since you first arrived?

DM: There's lots of changes in administration. I think the Texas Medical Center just continues to grow and continues to be a better and better place to do research. So I think that part of my success is the fact that number one there's so many patients seen here and it is such a center of excellence for aortic and other vascular diseases. I use those patients for my research so I have this constant stream of patients to recruit for my studies.

And then number two there are great collaborators here in the medical center. So I reach out to collaborators at all the institutions not just UT Houston. In fact, the last study that we just submitted to nature genetics. I actually went to talk with one of the people here in the medical school that was working in the field because we had found an awful gene and we were trying to figure out how the alterations that we found affect the function of the protein. I approached somebody here about collaborating on it and she said, "Well you know the world's expert on this protein is at Baylor. You really need to work with him not with me." So we went over and started working with Dr. Choel Kim at Baylor and that was a very, very... the results of that study were very interesting and like I said we just submitted it to Nature Genetics. It's those kind of, having the world's experts on different novel genes we find just across the street is really great. So we work with most of the cardiovascular surgeons in the medical center as far as recruiting

patients because there's always been an expertise in aortic disease here and the surgical repair of the aortic disease.

NG: Do you want to talk at all about the research you said you just submitted or do you not want?

DM: I can talk globally about my research but we just I was very interested in... We found the gene for Marfan syndrome and then I got down here on faculty and became interested in. Actually Jim Willerson pushed me to do these studies, he's the head of THI (Texas Heart Institute) and the past president of UT Houston, UT Health Science Center, and probably one of the world's best cardiologists. We found the gene for Marfan syndrome but of all the people with aortic aneurisms and aortic dissections they're a very small fraction of those individuals. I became interested in, was there a genetic cause for people to have these aortic dissections or ruptures if they didn't have Marfan syndrome?

We took all those patients that were referred to the Texas Medical Center for surgical repair and just asked them, "Do you have a first degree relative that is affected?" We ignored patients with Marfan syndrome because we'd know the majority of those would have a first degree relative. But what we focused on was the people that didn't, you know, the 98% of people that don't have Marfan syndrome and it turned out that approximately 20% of those individuals did have a first degree relative affected. We started getting family histories and we could get families with 3 or 4 generations of aortic aneurisms and dissections that didn't have Marfan syndrome. So we started recruiting those families and trying to find the genes that caused that disease and that's what I've been working on probably the last 15 years.

We've been going through and identifying genes for aneurisms and dissections to be inherited in families and we've taken some of those genes and made mouse models to try to figure out the link between the defective gene and then what we see clinically. You know, why when you change this just one gene out of the 20 thousand we have do you end up with this particular gene?

As part of finding the genes for aortic aneurisms and dissections we actually found a gene that caused aortic aneurisms and dissections but it also caused early onset strokes and early onset coronary artery disease. The strokes were really early onset and our cohort of patients with this particular mutation they can have strokes as young as like 14 months of age so really, really unusual early onset strokes. We've become very interested in these young adults and children with early onset strokes and started collecting families that have this running in their family to do the same thing to start finding novel genes for that particular condition. Now I think we have the largest cohort of patients with a rare stroke syndrome called Moyamoya disease and or one of the largest cohorts.

NG: Is that where your research is moving now?

DM: Yeah we are going to continue to find the aortic dissection genes but I'm interested now in also these early onset stroke genes.

NG: You mentioned when you are doing research that you end up recruiting families to participate in the study. How difficult is that?

DM: So now we've been successful finding genes that families come to us.

NG: Okay.

DM: This gene for early onset stroke we found it because one big family in the northeast called us up and said they actually called up a family in Nebraska where we had found the defective gene. That family ended up on the front page of the Wall Street Journal and the story of how dissections were running in the family and that the genetic basis of this disease was just being started to be studied by myself. So they called because they read that article in the Wall Street Journal, they called us up and said, “We want to see if you can find the gene in our family.” So I flew up there to meet them and talk to them and examine them and that was sort of the start of finding this gene that causes both the aneurisms and the early onset stroke. Now these families contact us from all over the world to participate in our study and they either go to the internet and see what we’re doing or they ask their physician and their physician sends them to us. We have families from New Zealand and Australia, Canada, all throughout Europe.

We have to consent them in their native language so that makes it difficult to recruit people from Italy and so on because it’s hard to get Italian translators on staff. It’s quite expensive to hire translators because we’d have to hire translators to translate the consent, consent the patient and then translate all the medical records and that gets a little expensive. Now we are actively just recruiting patients that way.

For the Moyamoya disease we decided to try to recruit families with Moyamoya disease. We worked with our Human Subjects Oversight Committee and we came up with a flyer saying that we are interested in doing genetic studies on Moyamoya disease if you are interested you know call this number and send an email to this email address. [We] put the numbers for some of the people, the genetic counselors, in the office in there

and so the web site was updated at midnight and the night it was updated with our flyer when we came in at 7:00 a.m. in the morning all the mailboxes were full.

The phone messages were full because nobody was working on this disease and obviously if you have this running in your family you really want to know who is going to have these early onset strokes and who isn't. And fortunately it's like aortic disease if we know who's at risk they can be treated so that the strokes can be prevented. That's one of the reasons I chose to work on this particular stroke syndrome. First of all we had found the first gene for it and secondly it was a stroke, it was a condition where if you know who is at risk you can treat it and prevent the disease and that's really important to me. I don't really want to work on a disease like Huntington's disease or Alzheimer's where we don't really have an effective treatment if I figure out that you're at risk for it. Because for me ethically that would be difficult for me to deal with patients where I tell them that they are at risk but not have an alternative to prevent that disease. So for me just psychologically and ethically I really am focused on diseases where if I find somebody is at risk we can prevent the disease and have a way to treat it.

NG: That was one of my big questions is the research that you were doing you know on the aortic rupture what kind of practical applications it had but you said that it's something that once found it can be treated?

DM: Right exactly. So if you know who is at risk they can be put on a protocol to prevent the life threatening dissections. So some of our families entered the study after you know 10 people in the family have died prematurely of dissections. In fact the paper we just submitted to Nature Genetics these are bad dissections that occur very young. They are occurring in these families as young as 17 years of age and they are deadly in

the subset of those people. This way we can get ahead of the disease and figure out who is at risk and then like I said we can, we know the surgical repair prevents the deadly type of dissections something called the “type A” dissections.

NG: Has your experience since you’ve been here, have you faced any kind of prejudices or obstacles being a woman in this field?

DM: Hold on a second... that’s one of the things that keeps your marriage strong is not to ignore your husband. Okay go ahead.

NG: I was asking about any kind of obstacles or prejudices you faced either within the medical school or in the Texas Medical Center being a woman in this field?

DM: Yeah there are some things that I faced that were very discriminating based on the fact that I was a woman with a family. But because they involve people that are still at the Texas Medical Center I don’t really want to choose I don’t want to talk about them on the record.

NG: Okay.

DM: But some of them were openly and blatantly discriminatory. At one point I had somebody tell me that my research program had grown too big with all my family commitments I just wasn’t able to handle such a big research program. They were trying to cut it down in size and it’s always difficult when that sort of thing happens and it’s so openly blatant and I actually had a lot of difficulties that I really wanted to go and sue the institution for discrimination. But it’s just a difficult situation to be doing that to your colleges even though it was so blatant and so paternalistic and inappropriate. But it doesn’t get you anywhere and my research program is even bigger now.

NG: How did you respond or how do you respond to things like that?

DM: I don't think there is a response you can say other than, would you say this to a man in the same position? Which they would not.

NG: Politically have you felt at times that you've had to kind of play politics more to ensure that your research wasn't cut down or anything like that?

DM: Yeah I think everybody has to do that.

NG: So that's not something exclusive to women or anything like that?

DM: I think yeah everybody has to play some politics I just don't like playing politics when they are based on discrimination. And I think most women would agree with me when I say there's always a subtle level of discrimination like there's always in pay equality, space equality, responsibilities and so on. And I don't think it's even that kind of the discrimination I'm talking about. I don't think is even conscious on the part of the men.

NG: It's been kind of institutionalized?

DM: Institutionalized or it's just you know I think women have to work harder to get the same credit in science and that may be true in other fields but there's certainly a large amount of literature demonstrating that women in science have to work, have to do better, get more grants to get the same reward as their male colleagues. That if you take a woman that is an assistant professor they tend to have a lot of the clinical responsibilities administrative responsibilities given to them over the men in the department.

NG: Was that your experience?

DM: I think I got, one thing I did, is that when I was looking at (we had multiple job offers) and I had to look at the person that was hiring me who was going to be my boss and make a decision as to whether that person would be fully supportive of my career or

not. So interviewing with different institutions here in the medical center one of the department chairs that I would have been under indicated that he thought that a woman with children just couldn't do well in his department even though he offered me a job. But based on that it made me doubt whether that was the right place to go so I made the decision to come here.

Dr. Jim Willerson was chair of the department here and I had worked with him at UT Southwestern and knew that he was very supportive of those individuals that worked hard under him and that I didn't, I never felt like I was discriminated against as a woman by him at UT Southwestern. So I made the decision to come here over another institution in the medical center with maybe a more prominent reputation because Dr. Willerson was going to be my chairman. I trusted him to treat me fairly and he did, he lived up to that trust 100% if not more so and has to this day been very supportive of my career and sometimes bent over backwards to help me out.

At one point right after I started on faculty here I had a parking space in one of the parking garages that took 30 minutes to get in and out of but I was trying to run home at noon and breast feed my daughter. I was wasting a lot of time and I went to him and I said, "Is there another parking option for me as faculty?" and he actually gave me his parking space right in the front of the medical center. So that's the kind of support that I expected from him (and in fact I didn't even expect that level of support) he of course went back to the Dean and got the parking space right next door, but then I had like the best parking spot in the medical school and it made it much easier for me to run home at noon and breast feed my daughter. I had that parking space until I gave it up for a

covered parking space across the street but it was really, that was the level of support he gave me and to this day.

I tell the women that I mentor that you have to be careful when you take a position and if somebody makes it clear that because you are a woman that that in some way is going to limit your abilities in their eyes before you even start then you shouldn't take that job. You need to find people that support you and where you want to go in your career whether that's your boss or your husband or your friends or you know the people that are in the office with you. That everybody has to be behind you for your success, I mean there's no reason to make it tough on yourself.

NG: Right. Have you found that circumstances have changed much for women from the time that you started?

DM: I think that there's been some changes, not any major changes. But there's still issues. So women enter as assistant professors at higher numbers than men but then if you look as they get promoted up from assistant to associate to full professor then percentage of women decreases at each step. Then if you look at the medical college numbers nationally like in the 1970's 10% of the tenured full professors were women and now I think it's up to 13% it just hasn't changed that much. And I think back in the 70's it probably was that there were fewer women entering at the assistant professor level. But now since like the mid 80's there's been no reason why there's not higher numbers of women as full professors. I try to spend time mentoring women and help them figure out how to negotiate a faculty position where they are going to be supported, how to balance the whole work, family issues. I've had things that I think have made me successful and

then also how to be successful as a scientist. Because I think it is different for a woman than it is for a man.

NG: I kind of wanted to ask these questions at the end but since we're talking about that go ahead and go in that direction of these pressures of trying to balance family and career from my prospective that is a type of a question that only gets posed to women and not to men. What is your opinion on that? Why that is?

DM: Okay well when my children were little and they woke up in the middle of the night sick they never called for their dad. They always called for me. So I was the one that would get up and you know stay up with them until they fell back asleep and to be honest with you I would have been devastated if they called for dad and not for me. So there are certain things that a mother wants to be the nurturing person in that partnership with their children and because of that you know I was up all night more often than my husband. I was more at their recitals and I went once a week to eat lunch with them until they told me not to come anymore when they were in middle school. But I wanted to be there more so than my husband wanted to be and I think that I wanted to be their mother That in my opinion is a different role than the father and maybe I'm being a little bit traditional but I think the mother needs to be the nurturer and the caregiver and the father you know has a different role. So that's just what I wanted to be as a mother and I think that role was different than what my husband's role was as a father.

NG: How many kids do you have?

DM: Two kids.

NG: And one girl, do you have two girls or a boy and a girl?

DM: I have a daughter who is 21 and a son who's 18. So they both are off to college this year. They are both gone for the first time. And I miss them a lot but they are having a very, very good time. In fact they are both at Yale University so they did very well. My daughter's getting ready to graduate and she's so upset about leaving college. She just loved her college, loves her college experience which is the way it should be.

NG: You said you found things that worked for you about being able to balance family and career. Can you give some examples or talk about that a little bit?

DM: Number one is to surround yourself, it was important to surround myself with people that supported me. So my husband was always very supportive of my career. My kids had the same nanny for 12 years and she would do everything. I mean she was totally behind me as a professional woman and she was just great with the kids and my kids adored her. She was like a third grandmother to them because she was 60 when I hired her. So she was like 72 when she stopped working. In fact as the kids stopped taking naps she started taking naps. And to this day they still just adore Connie. And so if I had to get to work early she would be there early. If I had to stay late she would stay late. She was just always thrilled to be working for a female physician that was successful. Then for the first I don't know 10 years I had a secretary who was exactly the same way. She would, if I was off having lunch with my kids she would tell people that called I was, "Out of the office on a very important meeting and could not be bothered." She just always covered for me and once again she was probably more dedicated to my career than I was at some times. Those two women I think were very critical to my support and I'll be forever in debt to them and so that was helpful.

Then my mother also supported me. So if I had to go out of town for a meeting when the kids were little she would go with me and I'd just take the kids with me so my kids got to travel a lot when they were young including to Europe and Canada and China and so on. Then after they got into school she would come and stay with them and so that because my husband is a pediatric surgeon so he would be on call. So they always had the same nanny and my mother would always come in to take care of them when I went out of town. So to have that sort of continuity was just wonderful and to have that family support and support from people that were taking care of the kids when I couldn't be there was just I think critical for the kids but also critical for me, because it would drive me crazy worrying about them. I'd leave town and all my professional friends tell me this, you know I'd leave like 3 pages of notes for my mother on what time do they get up, what do they have, where do they go, how do you get there when you are driving them, and all of these things. And she was just wonderful. So I think that's really important.

I think it's important to set your priorities. So for me the number... okay so if you set your priorities you know when you walk into the office what you need to get done and what you can say no to or put on the back burner and for me a lot of the back burner stuff never gets done. So my number one priority is my family because it didn't matter how successful I was as a scientist or physician if I didn't have like healthy, normal kids and if my marriage fell apart it wouldn't have been worth it. So that was always number one for me. Number two was research. I trained to do research and so that was really important for me to get the grants and write the papers and really be successful in that area. And number three for me my third passion was training the next

generation of physician scientists. So I talk about my mentees a lot. I direct the M.D., Ph.D. program here at UT Houston and as a joint program with MD Anderson. I have like 30 to 40 kids are mentees at one time, students in that program and I've done that for 15 years. That's incredibly important to me because I can only do so much as one person but if I continue to train the next generation and get them started on their career I can have a much bigger impact on where medical research goes in the future. Everything else after that is not that important.

It's easy for me to say when they came to me to say, "Will you be chair of the Department of Medicine?" "No." "Will you consider being dean of the medical school?" "No," and other administrative things. Because they are just not really my goals and also I have to see patients to stay in that sort of translational research niche, but I don't really want to build up a real big clinical practice. So I have hired three genetic counselors that help with assessing the patients and so I don't spend that much time, I still need to do the full history and physical and so on. But they really collect all the medical records, get a lot of the family history and so on. So I save time and we've hired a very good cardiologist to follow the patients after we kind of make the diagnosis and figure out what's causing their disease. So I can keep my clinical work to a minimum.

NG: Do you have regular hours or is your schedule varied?

DM: I tend to be up here maybe 10 or more hours a day but my days, I mean things get scheduled, and I have clinic on a set time but other than that it's pretty much my own. In the mornings I really use that time to write and to read and think about the science because in the afternoons like everybody else I get a little sleepy so that's when I have my meetings and do stuff like this. I don't really need those critical thinking skills as

much. So that's the way my days are usually scheduled and then I travel a lot and as I became more and more a prominent scientist I get invited to give grand rounds or key notes talks at meetings. Then my role as an M.D., Ph.D. and a woman I get invited a lot to give, to talk to M.D., Ph.D. students at different schools and give key note lectures at their retreats. So this week coming up I go to the Cleveland Clinic to give their translational research grand rounds and then on Wednesday I go to Chicago to talk at a clinical symposium on my research and how that research has impacted the care of patients with aortic disease. Then on Friday I go to San Antonio to talk at their M.D., Ph.D. retreat on Friday and Saturday which is good because my parents live in San Antonio and I have a couple brothers and their families there.

NG: That's where I'm from originally.

DM: Yeah I'm looking forward to my trip to San Antonio. The Cleveland Clinic will be fun and cold. Chicago is going to... I just have to fly up in the morning, give my talk and fly back. Yeah so part of doing research is that you have to get the word out and you have to alter the care of patients. So I do spend a lot of time flying to meetings and giving talks but I actually love to travel (part of growing up and moving all around). But also every time I go to the meetings you know you are with really smart people and you are discussing science or I'm with trainees or students and get to learn about what they are doing and talk to them about these mentorship issues and so on. I really enjoy that aspect. But as I get older I get really tired of traveling. And now I'm also on a lot of boards and advisory committees and those are fun too. You are sort of like shaping a direction that a patient foundation is going or the way the NIH is going.

NG: That was the next thing I was going to ask you because you said that you know that you turned things down but then when I look at your CV...

DM: Yeah I know it's crazy!

NG: You have a ton of committees not just committees for graduate students, but outside committees that you are involved in, grant committees and all those kinds of things.

DM: I think I have the longest list of key note speakers! Because those also go on your CV and I think I've got hundreds now anyway. So I enjoy being on committees because I think you can really impact I tend to choose committees that act nationally and it's hard for me to turn down like a patient foundation. Like the national Marfan foundation. I've been on their board for I don't know 15 years and I was chairperson of the board for 6 years. So I really enjoyed that aspect because those patients, you know they participated in my research and so this is my chance to help them grow the research and the research budget. When I was chair of the NMF increased like 10 fold or something like that so that they were able to fund a lot of research both nationally and internationally. So once again it all goes back to I can only... what I'm trying to do is number one give back to people that helped me with my research. Number two, make sure that the word gets out to patients on what we are doing and how it impacts their care and to change the way that they are being taken care of and managed. Then number three is to impact further, other researchers down the line.

I've been going to the National Marfan meetings so long they are like all my friends now! Certainly anybody who is involved in administration and the boards I know quite well and there's a group of women that have been involved in the Marfan

committee for about 10 years. So now we have these satellite meetings. So we were all at the Canadian Marfan meeting in Halifax Nova Scotia a year ago and Prince Edward Island was within driving distance of Halifax. We actually went to Prince Edward's Island and traced where the story of Anne of Green Gables I don't know if you know those stories and stayed at, rented a cottage to stay in there with a hot tub and so we drank a lot of wine that weekend! It was 6 women and I. So we actually are going next September to Vancouver so we can do the same thing out at Victoria Island off of, I think it's Victoria Island that's off of British Columbia. So yeah we have other plans to get together.

NG: So it sounds like a lot of the committees that you choose to be on are personally rewarding. Do you think that...?

DM: Personally what?

NG: Rewarding.

DM: Oh yeah! I think that and they are things that I care about. So I just go back from I'm president elect of the National M.D., Ph.D. Directors Steering Committee so that's really important because now I can impact M.D., Ph.D. training nationally with some initiatives I can set up there. And I'm also president elect of the Gulf Coast Region American Heart Board so I can try to figure out what exactly direction I want to take that. I think one thing I really would like to see the American Heart more involved in locally is you know shaping up Houston. Getting more people on bikes and walking and running and eating better and making better choices and I think the American Heart has such a big impact that they can really lead that (or help lead that) in Houston. I'm just sort of

starting to work with the group here to figure out how we can make that more of an impact here in Houston. I'm tired of Houston being voted one of the fattest cities.

NG: Right.

DM: I'm just tired of it! We've got to increase you know the amount of green space and walkways. I look here and look out at Rice and there's mobs of people running around rice because there's just not enough running trails in Houston. So I like the mayor's initiative of making greenways along all the bayous and hooking them up so that bike riders and joggers can use those. But then they have to plant trees so that they are doing it in the shade because that's one of the advantage of Memorial Park and Rice is that it's completely shaded.

NG: How crucial do you think it is to people's careers to serve on committees? Do you think that's a really important aspect?

DM: I think it's their choice of whether... I think it's, you know, like I said it's a chance to have a bigger impact than you will by not serving on the committees.

NG: I want to ask a little bit about funding for research. I mean how does that happen is it individuals applying for grants?

DM: Yeah so you apply for grants and that's usually writing up your scientific ideas and then you know outlining a way to address whatever hypothesis you have and so my funding comes from then primarily from the National Institute of Health (the NIH). I've also gotten funding from some foundations, some disease foundations like the National Marfan Foundation, the American Heart and others. At this point in my career some of those disease oriented foundations are now coming to me and saying, "We will give you \$100,000 to work on our disease" like to make the mouse model and try to figure out

what's going wrong. That's a wonderful position to be in because NIH dollars are dropping and these are obviously genetically triggered vascular diseases that they are interested in. Then more recently the John Ritter family allowed us to use John Ritter's name because he died of an aortic dissection, to start the John Ritter research program. We've used that to raise money from grateful patients and some of our patients have been very generous as far as funding, returning the funding after we find their defective gene or whatever.

NG: Where do you see funding for future research? Because I've heard people talking about that national...

DM: Institute of Health that the funding is decreasing.

NG: Right that the funding is going down.

DM: Well I would like to see foundations like the American Heart and these patient disease foundations try to step up and help supplement the funding. So and certainly what was done in Texas as far as this cancer research initiative, CPRIT it's called where they approach the tax payers and say, "Do you want to pay an extra small amount to fund cancer research in Texas?" and the answer was overwhelmingly yes. So I think those kind of initiatives are going to be incredibly important to keep research going. At the state level it's made an incredible difference in research in Texas because MD Anderson has used that money to go and hire the best cancer researchers for MD Anderson and I know UT Southwestern and other institutions have done the same thing. So it can be an incredible boon. In fact I was just going through the San Diego paper a couple weeks ago and they were talking about how horrible Texas was because it was recruiting away all their research stars because we had money here. So their top researchers were all going

to Texas. I mean that's an incredible, incredible boon for Texas because you know we may be the state leading research in cancer in the next 10 or 15 years because the taxpayers agreed. So I'd love to see sort of that initiative done for cardiovascular research, congenital pediatric diseases and so on. Pick the top diseases and see if people are willing to pay out of their pocket an extra \$5 a year to go in that direction of taxes.

NG: Do you teach courses as well?

DM: Yes I do. But that's like way down at the bottom. I mean it's okay to stand up and teach a course and I've actually gotten some nice awards for teaching but it's not a real effective use of my time if I'm just sitting there talking to 20 people. Does that make sense?

NG: Yes.

DM: Does it make me sound too arrogant? And I do like, you know, it's okay to teach. One time when I was a child somebody told me not to become a teacher because I really actually don't like talking that much. And so they said, "Teachers have to be able to talk and they have to like to talk and you just don't talk enough so don't become a teacher" because I was pretty quiet as a child. I think it's okay, but it's not my calling.

NG: So are you...

DM: And I really don't like teaching medical students. They are like "entertain me."

NG: Do you spend then most of your time in a lab or...?

DM: Right here writing papers and writing grants and then committee meetings and other type of meetings. Like we have a conference call set up with some collaborators at the University of Connecticut. I had another call this morning with the Thoracic Aortic Disease Coalition which I chair which is to increase public awareness of the risk factors

of aortic dissection. So we had a conference call with a company that is working on an instant differential diagnosis that people can use in their clinic or in the ER so they don't miss acute dissections. We are trying to make sure that all the risk factors are part of their differential so that people don't get sent home from ER's to die of dissections because they are missed. They are just not considered in their differentials.

NG: You still though you still have a lot of students that you said that you mentor and that you serve...

DM: So the M.D., Ph.D. students.

NG: ...and you serve on committees for dissertations and things like that.

DM: Right.

NG: So if you are not teaching there are people who just come to you because they are interested in your work?

DM: My M.D., Ph.D. students which I mentor in the sense that I sit through critical thinking seminars with them and also you know help guide them through the course of their training. There is a series of students that work in my lab that are my graduate students so I'm on their dissertation advisory and supervisory committee and then we sit down, frequently to go through their data and design experiments.

NG: You have a lot of awards and honors and things like that. Is there anything in particular that stands out to you that was particularly meaningful?

DM: One was the Antoine Marfan award which is given to the top Marfan researchers. I got that really early in my career and that meant a lot because that was coming from the patients. I got the UT Woman in Science Award and that was important. I also got the Bio Houston Award which was for top Women Scientists in Houston. Then the other one

was the University of Texas President's Research Award and that's given by colleagues here so that was really important.

NG: What kind of opportunities do you see for women in the future, since you do have a lot of students that you get to talk to where do you see the future of the research going and opportunities for women?

DM: Well hopefully all opportunities are open to women equally as they are to men. Research wise I think there's so many different directions to go that I think somebody should find out, try to determine what their passion is about because that passion will keep you going. I think that it's important to work on a research question about a disease or a system and not chase a technology because the technology changes all the time. If you try to work to become an expert in a certain technology that will by and large most likely be obsolete in 10 years. It's much more important to focus on a disease or something that you can work on your entire career.

NG: Can you talk a little bit about your position currently? What I saw is your Vice Chair for Research in the Department of Internal Medicine? (Phone interrupting) The last question was just about your current position now. If you could explain what that is?

DM: Well that's kind of it's all there on the CV I don't think there's too much to explain.

NG: Okay.

DM: I don't know how to answer that one.

NG: I guess just generally like what does it entail because like I said the Vice Chair for Research and also the Director of the John Ritter Research Program is that administrative positions that allow you to be able to continue to do work?

DM: So they are administrative positions but they are mostly they are sort of stuff that I do anyway does that make sense? Like the John Ritter Research Program is part of getting increasing awareness, raising money for the research program and promoting the proper care of these patients. This is all stuff that I'm doing anyway. Being director of that is just going in the direction that I want to go.

NG: Okay.

DM: Like I said I turn down administrative positions if I don't think that's actually what I want to do.

NG: Okay well thank you for your time.

End of Interview