Raffaella Lombardi grew up in rural southern Italy in, as she describes it, a simple, middle-class family. Her father’s family were farmers; her father himself a phone company technician; and her mother was an elementary school teacher. Lombardi loved to learn, read books, and play outdoors.

Early in life—as a young undergraduate at the University of Naples Federico II—she discovered a passion for medical research, specifically for cardiology, and more specifically for cardiomyopathies. From then on, she has never wavered from that field of study, first gaining an MD, then a PhD, pursuing postdoctoral studies and, in 2008, winning the Louis N. and Arnold M. Katz Basic Research Prize to continue her work. In 2013, Lombardi was appointed as an assistant professor at the Center for Cardiovascular Genetics at the University of Texas Health Science Center in Houston.

Lombardi’s unfaltering dedication to the study of how the heart functions and how it deteriorates during cardiomyopathy is all the more impressive given her confession to Circulation Research that she used to be terrified of blood.

Did You Always Want to Be a Doctor?

Actually no. I liked Physics. I was afraid of blood, so I never thought about being a medical doctor. After high school, I studied Physics at university, and I was there for one year, but I was not happy. It was too theoretical.

One of my uncles—a cousin of my mother—was a gynecologist. I was in his clinic one day because a baby cousin of mine had just been born and we were visiting mother and baby, when my uncle asked if I would like to come with him into the surgery room—he was about to perform uterine surgery on another patient. I said, “Are you crazy? I am afraid of blood!” He replied, “Who cares? It’s not your blood.” So he threw me into the surgery room, and, to my surprise, I was not afraid at all. I was looking at all this blood, but I didn’t care, I was too interested in what they were doing.

Was That a Turning Point?

Yes. Something clicked in my brain and that was that: I decided to go to medical school. I quit Physics because it wasn’t enjoyable, joined the medical school, and was happy from the very beginning. It was hard work of course, but I always felt satisfied.

How Did You Come to Choose Cardiology?

In medical school, before I decided on a specialty, I was going around to different clinics to see which subjects interested me. That’s how I found cardiology. I think I like it because there is a lot of hemodynamics, so there’s a bit of Physics. Also my mentor in cardiology, Sandro Betocchi, was very good. He explained things really well and got me interested in the subject, so I did my thesis with him.

In fact, I’ve never changed my field. Sandro was working on cardiomyopathies and I’ve stuck with that ever since.

How Did the Move to the United States Come About?

After my cardiology specialization, I realized I wanted to do research, so I got into the PhD program, also at the University of Naples Federico II. In Italy, if you want to do research, you have to have a PhD as well. Don’t ask why. We need to have as many titles as we can.

The PhD program allowed you to go outside the country. In Italy, the money for research is much less than what you might have in the United States, so I decided to come to the United States to do a real PhD.

Until this point I had been doing only clinical research and had no experience in basic research, and I thought, “nobody is going to hire me without experience.” So, I applied for a scholarship from the Italian Society of Cardiology and got funding to come to the United States for one year.

I wanted to join Dr Ali J. Marian’s laboratory because he is an expert in the molecular genetics and pathogenesis of cardiomyopathies. He accepted me, and I arrived on July 4, 2005, so I got to see the fireworks.

Have You Been in the United States Ever Since?

No. I went back to Italy in 2011 because my father was sick. By this point, I was a postdoc. For a while, I tried to make it as a researcher in Italy, but it is very hard because there are very few positions. So I carried on working as a research associate with Dr Marian, frequently traveling back to the United States, and on one of my trips he said, “I have an open position for an Assistant Professor.”

I was interviewed along with the other candidates, but I’ve been working on cardiomyopathy forever, so I knew I had a
Have You Ever Considered an Alternative Career?
No.

What Drives Your Passion for Science?
My curiosity because I like to learn, I like to discover.

When Did You Know You Wanted to Be a Laboratory Leader?
Maybe I still don’t know! No, I mean, I want to be a laboratory head—if you want to stay in academia, you must become independent. That’s the whole point—but I’m also realistic. I’ve already got one grant from the AHA, so that’s good, and I was awarded the Katz Basic Research Prize some years back, so we’ll see.

I’m not a very confident person. I don’t have this strong personality. But I have had several good laboratory results, which show me that I am capable. So, little by little I’m getting more convinced that I can do it.

What Is the Hardest Part About Being an Assistant Professor?
Getting grants! Funding is reduced, and you are in competition with established investigators. Also, in cardiology, there aren’t many grants to apply for. There’s the AHA and then there’s the National Institutes of Health research project grant (RO1), and the RO1 is hard. I haven’t applied for one of those yet because I need more preliminary data.

Have Any of Your Grant Applications Been Rejected?
Yes, the AHA application was rejected twice, and I got it on the third attempt, which was my last chance.

How Did You Deal With Those Disappointments?
With the first rejection, I got mad. I thought, “damn you, reviewers!” But then I thought about it and reworked it, figured things out. I realized that most of the comments were not completely wrong.

But the second time was worse because I’d done what I thought the reviewers had wanted me to do, but the application got immediately rejected. That was even reviewed. That was hard. But again, I changed a few things, sent it back, and the third time it was funded.

This taught me to never give up. I mean, what can be worse than being completely rejected? To go from that to success, well…

So, I would say, never quit. Because of course, if you don’t apply, there is a 100% certainty you will not get it. It’s like the lottery: if you don’t buy the ticket, for sure you cannot win.

So Do You Buy Lottery Tickets?
Haha. But one time I thought about it to get money for my research.

What About Disappointments With Experiments?
If I get a negative result, I get upset. But, do you know what makes me really mad? When I don’t understand why it didn’t work. If you understand what went wrong, then you can just repeat the experiment, but if I don’t know why it went wrong, it’s very disappointing.

How Do You Deal With It?
I figure things out, change things, and trouble shoot.

I Get the Impression That Quitting Is Never an Option for You
No. But I also have to say that I have a backup. I am an MD, so if I ever had no grants for research, I could still survive. For PhDs, they have no choice.

What Is Your Average Day Like?
When I am writing grants, I might work late into the night, but usually I come in around 8:00 or 8:30 am and leave around 7:00 or 7:30 pm. It is a long day but I am happy because in this group we are all friends. We help each other and work together. That’s what I like most about this laboratory.

What Do You Do Outside the Laboratory?
I paint. And if things are going badly in the laboratory, I paint more. It helps me to relax. Sometimes I paint landscapes, other times more crazy abstract things. Whatever comes to mind.

I have a cat at home. And lately I’ve started to grow some vegetables—like my father’s side of the family, but much smaller. I grow tomatoes, eggplants, and peppers.

Do You Have Any Advice for Young Scientists?
In my opinion, in life, you have to do what you enjoy. As a cardiologist, I could make a lot more money than I make as a scientist, but I choose to do science because I like it, so I don’t care. I mean, you still need to eat and have a house, but for me, I don’t care about owning a Ferrari. I just need the minimum and that’s it.

Obviously, you need to work hard too, but more importantly, you need to know where to direct your efforts. As a young scientist that isn’t always easy, so my last piece of advice is to choose a good mentor. They can help you.

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Ruth Williams

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