Alejandra San Martin runs the San Martin Cardiovascular Laboratory at Emory University’s School of Medicine in Atlanta, Georgia. Her group studies vascular smooth muscle cell biology—in particular, how reactive oxygen species drive migration of these cells during normal physiology and cardiovascular disease.1-5

San Martin likes to get her hands dirty at the bench, culturing cells and performing experiments, but there is more to this young investigator than meets the eye. On occasion, she’s been known to put down her pipette and pick up a microphone. San Martin has always loved to sing. Indeed, it was a hobby she pursued with vehemence as a youngster. She’s also a keen flamenco dancer.

The coexistence of these artistic and academic sides to San Martin’s character is not surprising given her upbringing in a family full of creative, cultural and intellectual influences. This childhood environment fostered an early love for learning, San Martin told Circulation Research. In fact, she was ultimately drawn to scientific research by the romance of the academic lifestyle, she says.

Where Did You Grow Up?

I grew up in Santiago Chile under the dictatorship of Augusto Pinochet. As a kid, it didn’t appear that bad but, in retrospect, there were many things that I assumed were normal that really were not.

Such As?

Curfews at night, when nobody could be in the street, and the fact that we always had a supply of candles because power stations would regularly be attacked and destroyed by political protestors. These were part of everyday life.

The country transitioned to a democracy in 1990, around the time I was going to college. It was liberating, especially because college is a time when you are very idealistic.

What Was Family Life Like?

My mum studied political science and was from a very academic family—her father, who had a 15 thousand volume library at home, was a judge, and member of the National Academy of History. My father was a jazz musician. He came from Buenos Aires in Argentina and traveled a lot before settling down in Santiago. I have a brother too. He’s now an engineer in Santiago. He’s also a very good guitar player.

I have that mix of interests too. I grew up thinking I was going to be a singer. That was my dream. In fact, for two years after my degree in biochemistry and before starting my graduate studies, all I did was sing. I was singing in bars and taking some singing classes, and getting involved in the music scene in Chile.

But, after a couple of years, I started to get anxious, not knowing where this singing career was going. Chile, at that time, was not the best place for a music career because all music production had been shut down during the dictatorship.

Also, my interest in biology started to grow. There was this famous Chilean biologist, Humberto Maturana whose work interested me, and I ended up going to his laboratory for a while. That experience spurred my return to academia, and I took up a PhD with Federico Leighton at the Catholic University of Chile. That’s where I was introduced to vascular smooth muscle cells.

Did Any Other Scientists Inspire You in Those Early Days?

My mother’s best friend, Astrid Rex, was a biochemist. In fact, she was the first one in Chile because the career didn’t exist before her. We were very close and every summer during my biochemistry degree, I went to work with her. I also did my undergraduate thesis with her.
What Drove You to a Scientific Career?
I think even before my love for science, I had a love for academia itself. This was probably because of my mother’s family, but I always saw universities as very altruistic environments. I had a romantic view of academia, of learning and of teaching. I also had an aptitude for math and science.

How Did Your Move to America Come About?
During my PhD I visited the laboratory of Francisco Laurindo at the University of Sao Paulo, who is an expert in redox biology, and I worked with him for three months. He encouraged me to go to a meeting in Chicago, and while at the meeting I met Kathy Griendling, whose work I admired. I asked her if I could come to her laboratory for a similar three-month placement, but she said she had no money. I said, ‘if I get the money can I come?’ and she agreed.

I applied for the funds in Chile, got them, and so headed off to Emory. At the end of my three-month visit, she offered me a postdoc position, so I returned to Chile, finished my PhD and off I went.

Did You Have Any Trepidation About Leaving Your Home Country for so Long?
No. I mean, I’m very attached to my country, I’m very attached to my family but at the same time, I knew it was something that was necessary for me as a scientist. I’m sure my mum was very sad that I was leaving, but she was also very encouraging.

Having already been to the laboratory for three months also made things easier: I knew the laboratory, I knew the people, I wasn’t stepping into the unknown. Also, my plan was to go back to Chile after the postdoc.

But That Didn’t Happen.
No. By the time my fellowship was ending, I started to approach some people in Chile, but the responses and conversations were not what I expected. They were a little informal, and I suddenly wasn’t sure if I was making the right decision. At the same time, Kathy told me that she thought I should apply for a transition grant—it provides funding for your last year of postdoctoral training and then a good amount of money to start your own laboratory for three years.

I decided to apply—I was just exploring options. But I actually got it! Then I was like, ‘OK, I guess this is the best option now. I should go for it.’

I interviewed at a few places, but ultimately decided to stay at Emory. I like the city and I have a good scientific relationship with Kathy. After a few years I got my first RO1 grant, and recently I got a P01 as part of a big program project grant, so the laboratory is growing and getting more established. I am very happy here.

What Is the Hardest Part of Running Your Own Laboratory?
One thing that I really, really, really hate is all the administrative tasks you have to do. They are not fun.

How Do You Handle This?
I still do all the admin myself, because the laboratory is not really big enough to justify hiring someone. My postdocs are good at helping me out, though.

Is Your Next Goal to Hire a Laboratory Manager?
That would be so awesome!

What Other Problems Have You Encountered?
As you progress in your career you take on more responsibilities, but these include things that you never trained to do. Other things come into the equation besides bench-work, such as your ability to communicate, your ability to pick the right people to work with you, your ability to let them grow and develop their own personalities and styles. That hasn’t been easy for me.

I find the personal conflicts hard—the times when I have not been at ease with the people with whom I work. For example, sometimes I don’t know exactly how to be clear about what I expect from a postdoc. And if they don’t do what I’ve asked, I don’t always know how to deal with it. It’s a conflict for me. But these are all things I guess you learn with time.

Sometimes there are also conflicts between people in the laboratory, where projects might begin to overlap and people get worried. Dealing with that is difficult. You have to be smart and see the bigger picture and try to give options and solutions that will make everybody happy. But it’s not easy. Sometimes I leave things in the hope that they will resolve on their own, when probably I should step in.

How Do You Get Through Those Tough Situations?
Talking, lots of talking, and trying to be very open and honest. Also, I try to tell my staff that we are all in the same boat and we are all working toward the common good.

I am very close to the people I work with. I still go to the bench and do experiments myself. It is nice to work so closely, but it can also make it difficult when I need to adopt my boss status. At times that can be challenging. I never had a class on managing people, or psychology, or anything like that. It’s kind of awkward.

What Drives You?
Research wise, it’s whenever I get a positive result. For example, at the moment we are investigating a mitochondrial protein, Poldip2, and I am very passionate about knowing what it is doing, and I really enjoy every positive result that we have. I may be a nerd, but it makes me very happy.

In this career there is a lot of frustration. Definitely there are more negative results than positive. So when you do have positive ones, they better make you really happy. You really need that high to counteract all the frustration. I think, if that doesn’t make you extremely happy, you are probably not in the right career.

And What Makes You Happy Outside the Laboratory?
I dance flamenco, and I have a group with whom I sing. But I don’t do it as much as I would like to. I love sports too, and I go almost every day to the gym in the mornings. And I have my dog. His name is Santiago, like my home city. He is my passion. We go outdoors a lot. Atlanta is a great city to do that.

Do You Have Advice for Young Scientists?
In life generally, a very important thing is to know your flaws. Know yourself very well and know what are your highs and
your lows. Try to take advantage of your highs and try to find ways to manage your lows. Of course, this will be a lifetime of learning.

But it’s worth the effort because the only thing that can get in the way of your development, generally speaking, is yourself. So, I think it is really important to look at yourself with a critical eye and understand yourself as a person and try to do the best with what you have.

References


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Ruth Williams

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