As the youngest of five sisters, Katey Rayner could perhaps have been at risk of being overshadowed. But that never happened. As a child, she was outspoken, always debating, dissecting people’s arguments, and constantly asking, why? In those early days, the endless questioning was a way to rationalize and understand the world. But by the time Rayner was an undergraduate student at the University of Toronto, the questions became more focused: How do diseases happen? What are their molecular pathologies? How can they be treated?

Later in her career, Rayner added new, equally important questions: How do I give a talk? How do I write a grant? How do I write an article? These questions were aimed at garnering advice, but not necessarily to follow, she says. Rayner curates advice, essentially polling people to see what’s out there. And this aspect of her character, she insists, helps her achieve her goals and stay one step ahead when making career plans.

Rayner is currently the Director of the Cardiometabolic MicroRNA Laboratory at the University of Ottawa Heart Institute, where she and her team investigate how microRNAs contribute to the development of atherosclerosis and how microRNAs may be used to treat cardiovascular diseases in the future.1,2

Where Did You Grow Up?
I grew up in Ottawa, Canada, where I am now. The summers are very hot and the winters are very cold—as a kid, I walked backwards to school because the wind was so cold in my face. But it’s also so snowy and sunny that there are a lot of activities you can do, like skiing and ice-skating, which makes it fun.

Did You Always Know You Wanted To Be a Scientist?
No. I always really liked school. It was something that came easily to me—I was a typical bookworm. But I wasn’t particularly fascinated with nature. One of the things I always loved, in fact, was drama class. I toyed with the idea of doing it a little bit more, but then I tried out for the high school improv team and I didn’t make it, so that was that. I often look back and wonder whether that helped seal my fate as a scientist rather than as a comedic actor, or something like that.

Do You Think That Love of Performing Helped With Your Scientific Presentations?
Yes and no. I’m probably more relaxed than some people about giving talks, but it took me a while to figure out how to approach it. Because I’m quite bubbly and outgoing, I tried to be more serious for a while. When I was a PhD student and early postdoc, for example, I thought, ‘I can’t crack jokes because people won’t take me seriously.’ But then I realized I couldn’t keep that up. I worked out that if I was just myself, rather than what I thought a scientist was supposed to be like, I would give better presentations.

Tell Me How Your Love of Science Developed
In high school—when I actually started dissecting things and pulling things apart—it became very clear that my interests were in humans and animals, but not plants. I thought, ‘Well, the obvious path must be medicine.’ But once I was at university in Toronto there was this new program called Laboratory Medicine and Pathobiology, which focused on the molecular mechanisms of different diseases. To me that was an amazing experience and was certainly the reason I became a researcher.
rather than a physician. I realized that it satisfied my curiosity much more than medicine could.

There was never a big master plan to my career. It was always just, hey, this is fun, I’m pretty good at it, so let’s keep going.

**Have There Been Any Difficult or Stressful Moments in Your Career?**

After my PhD at the University of Ottawa, I moved with my husband to my postdoc with Kathryn Moore at Massachusetts General Hospital in Boston. But within a couple of months, Kathryn announced that she was moving to New York and asked me to come with her. At that time, we had just scratched the surface of a very important project and had heard through the grapevine that other groups were working on it too, so the race was on. Having to move to New York and set up a new laboratory at the same time was definitely a big challenge. But we were able to do it, and it got published in *Science* a few months after we moved, so it was ultimately a success.¹

Working on a hot project in a competitive area was certainly stressful. It made me work at a pace that I know is not sustainable. I couldn’t have worked like that for the rest of my life. But at the same time it was really exciting.

Then I had a baby.

**Oh Boy**

Yeah. People say there is no good time to have a baby and that couldn’t be more true. If you want a family at some point and you’re in a career like this, there is literally no good time, so just do it when it’s right for you. That’s what we did.

**Tell Me About the Transition From Postdoc to Lab Head**

My husband and I had always wanted to come back to Canada, so when I was ready to look on the job market and see what was out there, my focus was to look in Canada. And at that time, the funding rates in Canada were actually much better than the United States, so it wasn’t a hard decision!

There just happened to be this position at the Heart Institute and being from Ottawa it was a no-brainer. Another big draw was that the Institute is also a major clinical center for all cardiac care in the region, so we’re right next door to the cardiologists and clinicians treating the patients. It’s pretty convenient from a translational perspective to have access to the patient material you need.

**What Has It Been Like Setting Up Your Own Laboratory?**

One benefit of moving laboratories during my postdoc is that I learnt how to set up a laboratory. I learnt all the nitty-gritty of what’s required when you are negotiating, the lists of equipment you need, and how to transfer your mice. That served me so well when I was setting up on my own

But there were certainly difficulties too. It’s amazingly difficult to have your first papers published and get your first grants. It’s so much harder to get it done than I expected. People—like journal editors and reviewers—are less inclined to just believe you and take your word. They set the bar a little bit higher and want you to prove yourself—to show that you can do the work you said you were going to do.

I also put a lot of pressure on myself. I had had a fabulous postdoc experience that was very successful. I felt like I had to maintain this level of productivity that is almost impossible to do as a junior investigator. At first I didn’t really give myself a break. I thought, ‘I can do this.’ But the reality is it does take a long time and, honestly, only in the past year have I thought, ‘Finally! My big grants are getting funded, my papers are out.’ You know, I’m 4 years into having my own laboratory and only now do I feel comfortable in my own skin.

**Do You Have Ways of Coping With the Stress?**

I took up running. That became my outlet. I didn’t really have hobbies, so in the evenings I would finish up some work and then somehow I’d be down the PubMed rabbit-hole. Two hours would have passed, and I wouldn’t even know where I was anymore. But then after I had my second baby, I thought, ‘You know, I should get in shape.’ I realized that running was an incredible way to get rid of stress. I was under a lot of pressure as a new PI and I would feel the pressure release when I would go for a run.

I also reward myself a lot, so this summer, for example, I was successful in getting grants, so I took some weekends off and I’ve done things with my kids. You know, you work, you do what you need to, and then you can reward yourself with a little break.

**What Aspects of Your Character Have Helped You Succeed?**

I have always asked for a lot of advice, both from the people that have made it and the ones that haven’t. I don’t take all the advice, but I sit on it for a little bit and think about it. I also have always thought about the next step of my career well in advance. So, for example, I secured a postdoc position almost a full year before the end of my PhD. I asked people, ‘What did you do in your postdoc?’ ‘How do I ask for a postdoc?’—all those sorts of questions. Some other people may get to the end of something and then say, ‘now what?’ I like to be more prepared.

**What Are Your Plans for the Future?**

Honestly, I haven’t been at the bench as much as I would like, and I actually kind of miss it—so I’d like to get my hands dirty more often in the laboratory. Also, much to my own surprise, I have become quite vocal about science funding and policy so I’d like to become more involved as an advocate for research funding.

As for my research, I’m certainly ready to take more risks and put myself out there some more. Luckily, I’ve got an excellent group that is willing and ready for such challenges.

**References**


Katey Rayner: Always Asking Questions
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