Dr Renu Virmani

In the Cardiology Masters section of *European Cardiology Review*, we bring you an insight into the career of a key contributor to the field of cardiology.

In this edition, we feature **Dr Renu Virmani**, Founder and President of CVPPath Institute.

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Dr Renu Virmani is a cardiovascular pathologist who is recognised as a leading researcher in the field of cardiovascular disease treatments. She is a clinical professor in the Department of Pathology at Georgetown University, University of Maryland-Baltimore, George Washington University and Vanderbilt University. She served as chairperson of the Department of Cardiovascular Pathology of the Armed Forces Institute of Pathology from 1984 until 2004. Dr Virmani is a member of the American Heart Association, the US and Canadian Academy of Pathology and is a Fellow of the American College of Cardiology. Dr Virmani serves as the President of CVPPath Institute, which she founded in 2005. She lectures at international scientific meetings and has delivered more than 800 presentations globally. She has authored or co-authored more than 600 publications in peer-reviewed journals, covering atherosclerosis, vulnerable plaque, stents and other cardiovascular diseases. Dr Virmani has edited seven books, written more than 100 book chapters and is a manuscript reviewer for many scientific journals. Dr Virmani was awarded the TCT Career Achievement Award by the Cardiovascular Research Foundation. She has been recognised by the Council on Clinical Cardiology of the AHA and delivered the Laennec Clinician Educator Lecture. She was awarded an honorary degree from the University of Antwerp, Belgium and received honorary awards from European Society of Cardiology and EuroPCR. Dr Virmani received her MD from Lady Hardinge Medical College, Delhi University, New Delhi, India.

Luck or circumstance?

It was 1974 when I met my husband in India and we decided to move to the US. I had already completed my MD Pathology in India, so I set out looking for a job. Two months passed and still I had found nothing. However, a chance conversation with my parents-in-law connected me to Professor Sylvan Weinburg – an incredibly influential cardiologist and past president of the American College of Cardiology – who subsequently introduced me to Dr William (Bill) Roberts.

Bill himself is a renowned cardiologist and was ‘the man’ of cardiac pathology at the time. I supported him for 8 months in an unpaid internship, writing my first research papers with him while I continued my residency. Bill taught me everything I know; I never set out to become a cardiac pathologist, but Bill inspired me, motivated me and made me who I am today. He had faith in me and gave me the opportunity to flourish. I was incredibly lucky to meet and learn from one of the best cardiac pathologists in the world. Our meeting was circumstantial and subsequently my career seemingly fell into my lap. Or, perhaps, did things fall the way they were supposed to? For me, it was both luck and hard work that determined my direction.

Standing on the shoulders of giants

Bill was a very exciting person – I couldn’t have asked for a better mentor. He had a charming way of teaching you, making everything a learning opportunity. I remember, he would always look at a case and ask me: “What is unique about it?” Bill influenced me, and my career path, much more than the research itself.

Mentors are everything. If your mentor excites you, you follow in their footsteps – and I wanted to emulate Bill. This was so influential for me that I have tried to do the same for my fellows over the years. The future lies in training and helping them to access opportunities that will help them to flourish. I’ve been lucky to support some young researchers and inspire them to achieve their own successes; to instil the belief that if you work hard and apply yourself, you can achieve anything you want. It’s something I’m very proud of.

Mentors can come from both your personal and professional life. I grew up in a very large family – I am the youngest of 10 girls! That really drove me to be someone amongst the crowd, a trait that I think

Figure 1: The CVPPath Institute Team, 2017

I have carried throughout my career. My aunt was instrumental in seeing I got an MD. Having trained as a neurologist in the later stages of her life, she had the foresight to push me from a young age. I admired her, and she showed me that women can do whatever they want. Of course, there are hurdles, but we can go around them. It's not always a straight path so don't be afraid to take a zigzag one!

Driving research and new technologies

The first paper I worked on was with Bill and focused on rheumatic heart disease. This really excited me as, coming from India, rheumatic heart disease was a really big problem and I wanted to contribute. Bill had certain views on atherosclerosis and I didn't always agree with him! Nevertheless, working alongside him gave me more and more exposure to the field and the experts in it. From this, I built a greater understanding and that's been my main area of interest ever since.

Technology and devices have driven my interests too – and that's largely thanks to Marty Leon. We were fellows at the same time and he first came to me with a stent; I'd never seen one before and he asked me: "How do I evaluate this? How do I determine if this is a good thing, or not?"

I think he came to me because I always try and speak the truth – I always try and remain honest to myself and my patients; so, if you see something wrong, you must speak up. For me, it's important to always describe things as they are, rather than painting a good picture. This is because no matter how good something is, there can always be room for improvement. By acknowledging this, we as physicians and the industry can correct ourselves and continually drive improvements.

The motto that I live by is: "The patients are the first thing that matter." That's how I got into devices! More and more people started to come to me to critically appraise new technology, so I took the opportunity to

be the honest voice on behalf of the patient. That was a major driving force for my career that again steered me because of who I knew.

Taking an unexpected path was the best thing I ever did

My biggest achievement has to be setting up CVPPath Institute. It was never an ambition of mine to start up myself, but I'd been working in the Armed Forces' Institute of Pathology for 20 years and when I learned that our base was closing, I just couldn't let that happen! I took what we had and worked solidly over the next 5 months to turn the Institute into a non-profit organisation. We started with 10 people in 2005; within 2 years we reached 26 people, and now, after 14 years, we're close to 50 people strong (Figure 1).

Sometimes you need the courage to do something different – you find yourself in situations or meet people who give you the courage to take a path that is unusual to you. That was the Institute for me, and it's the best thing I ever did.

Visions of advances in prosthetic valves

I'm interested now in the area of valves and how we can improve the longevity of prosthetic valves in patients. Can we get them to stay in patients for longer without deteriorating, avoiding the need for re-surgery in large numbers of patients? Can we further improve coronary stenting? These areas still very much excite me.

I think the future is not just in bioprosthetic valves, but also in bioabsorbable scaffold/stents. Unfortunately, the first iterations didn't work, but I hope to see it one day. The technology is not here yet – reiterations are required first. It takes honesty to see and realise that. For example, when the first drug-eluting stents became available, I highlighted the flaws and discussed how they could be improved. This, in part, led to the development of the bioabsorbable stents and I hope I played a small role in driving that. ■