How the central nervous system receives signals from the peripheral circulation and then regulates cardiac output and vascular resistance accordingly has been the focus of Francois Abboud’s research for several decades. His contributions to this large field began with investigations at the integrated systems level. But, work soon progressed to the molecular and genetic level, with Abboud’s particular focus being the form and function of baroreceptor neurons.

As Abboud explained in a recent interview, however, research is just one third of his professional passion. He is also, in equal parts, a dedicated physician and mentor.

Abboud, who is Professor of Medicine, Molecular Physiology, and Biophysics, and Director of the Cardiovascular Research Center at the University of Iowa, has been living in the United States since 1955, but he was born and raised in Cairo, Egypt. Abboud spoke to Circulation Research about the Egypt he remembers, his move to the United States, and his career in cardiology ever since.

What Was Life Like Growing Up in Cairo?
Where do I begin? My mother ran a private school at our house. The school was on the first level, and we lived on the second and third floor. My mother worked very hard and managed both the school and our household. She actually hired my father and one of her brothers to teach. My father was an English teacher and had a second job with the telephone company, but wanted to continue to pursue graduate education. So, when I was going to medical school he was going to Journalism School at the University of Cairo. Abboud spoke to Circulation Research about the Egypt he remembers, his move to the United States, and his career in cardiology ever since.

How Did You Become Interested in Medicine and Science?
Growing up in those days, your aspirations, if you had a good education, were to become either a lawyer or an engineer or a physician. I enjoyed science at school and my grades were competitive, so I leaned toward medicine. In secondary school, I entered a national Chemistry competition and won a scholarship that paid for my entire medical school education.

The choice to go into medicine, perhaps also had something to do with my brother’s illness. One of my older brothers became very ill with chronic glomerular nephritis. There wasn’t much that could be done—there was no dialysis back then. He was almost always in bed at home, and I remember sitting with him. He was 19 or so, and I was 13 or 14. I watched him struggle with the illness, and eventually he died. That left a big impact on me.

Later, I developed a similar kind of illness, but not as severe, called nephrotic syndrome. I retained fluid and became edematous, and had to be on a very strict diet. I lived with the notion that one day the disease might become chronic, and that I might die like my brother. In desperation, my parents sent me to Paris for treatment by a prominent nephrologist. I doubted that this made any difference. Thankfully, however, the illness eventually cleared up, and I have never had a recurrence.
How Did Your Move to the United States Come About?

That was serendipity. There was a secondary school teacher called Agnese Dunne visiting Egypt from Wisconsin. She was interested in minority education, and one day she was wandering around in the Christian district where we lived, and she saw the sign for my mother’s school. She knocked at the door and introduced herself. My mother spoke mostly French and some English, so she came to get me. I was taking a nap. She said, there is an American woman at the door and I want you to come and speak to her. I asked, is she pretty? How old? My mother was not amused. Anyway, that is how I met Agnese, and long story short, she became a very good friend of the family. I was in medical school at the time, and Agnese strongly suggested that I should get some training in the United States. This was the last thing on my mind. Most of my teachers in medical school had been trained in England, so my aspiration was to go there. I had been saving money to go to England.

But Agnese kept saying, no, no, you’ve got to go to the United States. She was persistent and took it on herself to send a reference letter about me to the Vice President of Marquette University in Milwaukee. To my great surprise, I received a letter offering me a residency position, even though I had not finished my internship. I decided to go for it.

This meant I had to very quickly get married to the girl I loved: Doris. We were engaged in March, married in June, and sailed for the United States 2 weeks later. I started as a resident at Milwaukee County Hospital on July 1, 1955.

You’ve Lived in the United States Ever Since?

Yes. You never really know how life will evolve. You make a decision at an instant in time and you don’t know where it will lead you. Many of my students ask me, how do I plan my career, and I say, the thing is to let things happen to you, and when they happen you should enjoy them and do the best you can.

At the beginning, we expected to return to Egypt within a year. We were very lonely. It was especially difficult for Doris. Later on, she told me that in the first 6 months she had been crying nearly every night. I was very busy as a first-year Resident, and was on-call 3 or 4 nights a week. But then Doris found a job at Marquette as a secretary, and we had our first baby, Mary Agnese.

We were up and down about staying or going back to Egypt. We thought we would have to go home because of our visa situation, but at the time, there was a war in the Middle East—the Suez Crisis—so my father advised us that we should stay where we were for the time being.

Then, serendipity struck again. In part because of the Suez war, President Eisenhower declared that all Middle-Eastern applicants for U.S. citizenship would be automatically accepted. We were naturalized as citizens, and here we are 55 years later.

Why Did You Decide to Specialize in Cardiology?

That was serendipity too. Toward the end of my third year of residency, I knew I wanted to do some sort of clinical research, but I didn’t know exactly what. One day, a senior cardiology faculty member was having lunch with me, and he asked me what I was doing next year and I told him I didn’t know. He said, why don’t you come to cardiology?

So, I spent a couple of weeks reading the literature, and applied for a grant and got it. It was for $5000, from the American Heart Association. That’s how I became a cardiologist.

After 2 years, I decided I needed to leave Milwaukee and find some place where I could totally immerse myself in research to see if I really liked it. I applied to Andre Cournand—the Nobel Prize winner—at Bellevue Hospital in New York. I interviewed with him and because I could speak French we connected well, plus I had my small grant, so he accepted me. But, when I went home after the interview, my mentor dissuaded me. He thought I would end up being just a cog in a wheel.

Instead, when we were at an American Heart Association meeting, my mentor introduced me to Jack Eckstein. Jack was an American Heart Association Associate Professor at the University of Iowa. He also had an opening for a postdoc.

When I went to visit Jack Eckstein in Iowa City, it was cold, snowy, the hotel was third rate, and the hospital facilities were archaic compared to Milwaukee. But I liked the people! I felt a strong sense of welcoming and warmth, and decided on that basis that this would be the place to try. Doris had never seen Iowa City before our move. I can’t imagine such a thing nowadays.

What Is Most Important to You—Research, Patients, or Teaching?

All three. There’s a great reward in feeling that you can help somebody, and share their illness and their private concerns; to be able to feel intense caring for them. With students and residents, there is also an enormous satisfaction that comes from teaching and helping them learn and explore, and seeing them succeed. And, as for the research, it is extremely exciting. There is tremendous satisfaction that comes from discovering something new, as little as it might be. The more one studies, the more one is awed and amazed at the immense complexity and beauty of the human body. So, the academic environment is perfect for me because I love everything I do.
What Are You Most Proud of in Your Career?
At certain points you think, maybe I could have the audacity to imagine winning the big prize, and after a while, you realize you’re probably not going to. But then you also begin to realize that whatever you’ve discovered, no matter how small, it is part of a bigger structure, like a thread in a tapestry.

I used to tell my students, each one of us will contribute a few threads to the tapestry, and then some lucky Nobel laureate will fly on it to the stars.

I think being a good mentor has been very important to me. One of my proudest moments was when my young resident, Michael Welsh, became a Howard Hughes investigator and was inducted into the National Academy of Sciences. I went with him and his family to the induction. I felt an enormous amount of pride. I didn’t get into the National Academy of Science myself, but the fact that he did was good enough for me.

I’m also proud of having what might be the longest running grant for a single investigator ever! In 1970, I became Chief of Cardiology, and in 1971, I applied for a program-project grant—bringing together 3 or 4 projects from other researchers with mine to converge on the same problem. I got the grant, and have been renewing it every 5 years ever since! It’s been 40 years now. With each renewal, it becomes larger, engaging more faculty from more departments. This was first and foremost a team effort.

The proudest part of my personal life for which I am also grateful is being Doris’ husband for 55 years. Her love and unselfish partnership have been key to everything that has been good in our life, including our 4 children and 8 grandchildren.

Why Did You Remain at Iowa for All That Time?
The opportunities for academic leadership were extraordinary. Jack Eckstein, my mentor, became Dean in 1970 and gave me a chance to lead and a legacy of excellence and mid-western values.

Although I said our facilities, when I arrived, were archaic, our medical center has grown to be one of the premier research-oriented medical schools. I am proud of my personal contribution to this phenomenal ascent, both as founder and Director of the Cardiovascular Research Center since 1974, and simultaneously as Head of Internal Medicine from 1976 to 2002.

Do You Still Work Every Day?
Yes, I think work is prayer. I don’t know if I could even call it work. It’s a joy.

How Has Your Research Changed Over the Years?
When I started out, it was all about different bodily systems and how they integrate. Now, it’s all genetics and molecular biology. The opportunity to ask more probing and final questions with such powerful techniques and tools—such as looking at the function of a single ion channel or its structure—is unbelievable.

We’re using animal models of disease like knockout mice to look at how certain molecules affect disease states, such as heart failure or hypertension—that is a new and fascinating area. And, my most recent work pulls the immune system into the mix—how the nervous system controls the cardiovascular system via the immune system. It never ceases to be interesting.

The great thing about biomedical research that is different to any other science, is that not only does it seek the truth, but the truth is one that generates hope and cures, not just knowledge.

That said, science doesn’t give us all the answers. And, that’s when the patients need us most. Caring for patients can still be very helpful to a sick person, when the science has nothing left to offer.

What Advice Do You Give Your Students?
Love life, let things happen to you, and be passionate about what you do. It is a really wonderful career. I wouldn’t trade it for anything else. Also, believe in yourself and work hard.

There is a quote from Mother Teresa that I use a lot: “We may not do great things, but we will do small things with great love.”

References

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None.
François Abboud: Relishing the Academic Environment
Ruth Williams

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