James Willerson: Leading the Texans' Fight Against Heart Disease

Ruth Williams

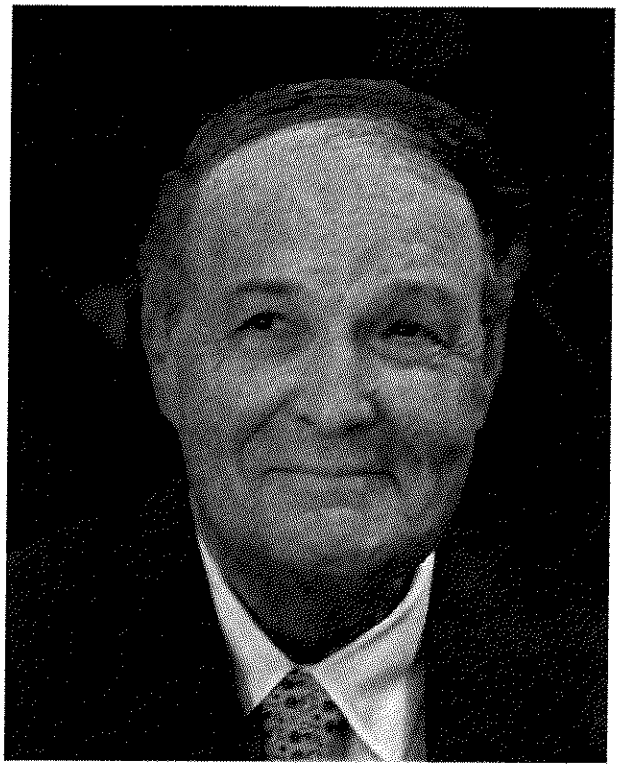
Editor's Preamble:

Jim Willerson is a living legend in cardiovascular medicine. He is a splendid epitome of the scholar who has reached the pinnacle in all three facets of the academic triple threat: patient care, research, and education.

What I find most extraordinary about Jim Willerson is not his extraordinary career, whereby he rose to be President of The University of Texas Health Science Center in Houston and, now, of the Texas Heart Institute. It is not his ability to turn anything that he touches into gold, creating new programs and dramatically elevating existing programs wherever he goes. It is not his prodigious level of productivity, which has continued unabated for several decades. It is not his innumerable awards and recognitions. What I find most extraordinary is the intensity of this man—his total, relentless, and unconditional commitment to academic medicine. You cannot interact with him without being struck by his intensity. Below his calm, soft-spoken, unassuming demeanor burns the inextinguishable fire of a boundless passion. Jim Willerson is a man who lives his life as a mission—a mission to advance cardiovascular medicine.

What is the secret of his success? For this, I exhort you to read carefully the Profile below, where you will find a treasure trove of insights and advice. These are invaluable to everybody, but especially to young investigators. Like all highly successful people, Jim Willerson is blessed with a rare intellect; it is obvious that his superior intelligence and remarkable vision have played a major role in his career. These, however, are things that cannot be learned or acquired by others who don't have them. What can *be learned and emulated by others are some of his habits, among which I would like to highlight 2 that I believe are essential for an investigator to succeed.*

First and foremost is the habit of hard work. The most important statement that Jim Willerson makes is that "one can't really do anything of any significance without devoting oneself to the task and working hard." As I have written before, this is one of the greatest truisms of life (and not just academic life, but life in general, as this axiom applies to anything that we wish to do). Of course, one must also possess talent, but that is not the most important thing. The most important thing for success is, by far, hard work. There is simply no substitute for good old-fashioned hard work. No talent, however great, can make up for it.



James Willerson

Success is 10% inspiration and 90% perspiration. Curiosity, creativity, innovativeness, and even intelligence and talent will not be enough if they are not accompanied by long hours of hard work, day after day, week after week, year after year. To put it plainly: You can be smarter than Albert Einstein but, if you don't work hard, you will not go anywhere. The world is full of very smart people who never made it because they did not work hard. In biomedical research, where the educational system is fairly good at selecting the brightest students, there are tons of

(*Circ Res.* 2012;110:381-384.)

Circulation Research is available at http://circres.ahajournals.org

DOI: 10.1161/RES.0b013e318248ecf6

smart people competing with one another, and so intelligence is not a particularly distinctive or differentiating attribute. What does differentiate one investigator from another is their work habits. I have seen so many smart and talented investigators fail because they are lazy or want "reasonable" work hours. Sorry, success in research requires unreasonable work hours.

Let me repeat this concept one more time, lest it may go unnoticed: Nothing of any significance can be accomplished without a lot of hard work and without devoting ourselves to the task. *I have underlined the sentence because it is my impression that young investigators are not told these things anymore; sadly, in today's culture, it seems no longer fashionable for mentors to tell young people that they must sweat and sacrifice in order to succeed. The truth, however, does not care whether it is told or not; failing to explain this truth to students/trainees does not change the reality of life.*

The second habit that emerges from this interview, and that is also essential for an investigator to succeed, is perseverance, which is really a measure of one's inner strength. What makes it necessary is the fact that research is very arduous and very frustrating; ergo, one cannot achieve his/her goals unless he/she is able to persevere. Without perseverance, any effort will be futile and short-lived.

Finally, I would be remiss if I did not point out another key ingredient of success that Jim Willerson embodies: drive. Although this is not a habit but rather an inherent personality trait, I wish to mention it because it is necessary to make things happen in research. In fact, it is an absolute sine qua non. *Drive (the "fire in the belly") is the force that fuels and propels research efforts, enabling us to overcome all sorts of difficulties. Unfortunately for those who don't have it, drive is innate: I don't know if it is genetic or acquired in early childhood (as a result of the environment in which a child grows up), but I know that once an individual reaches adulthood, drive cannot usually be taught, learned, transmitted, or acquired. Trying to instill drive in someone who doesn't have it is like trying to change someone's height—not only useless, but also counterproductive.*

These are but some of the precious lessons embedded in the interview below. I hope that you will enjoy this Profile, which will give you a glimpse of the personality, qualities, and habits of this great man. I am certain that you will sense his extraordinary commitment. Commitment to caring for the sick. Commitment to advancing the frontiers of research. Commitment to teaching those who wish to be educated. For trainees and early career investigators and clinicians, Jim Willerson is one of the best role models that the academic world has to offer. His life and his work, as they transpire in this interview, teach us many things, among which is the fact that without total commitment and boundless effort, nothing of any significance is possible.

—Roberto Bolli

James T. Willerson describes himself as a proud Texan. He was born in the small town of Lampasas, grew up in San Antonio, studied in Austin, and has spent the majority of his medical career in Dallas and Houston—save for five years training in Boston and two at the National Institutes of Health, Bethesda, MD. Despite his strong attachment to the Lone Star State, however, his contribution to cardiovascular science is world-renowned.

Indeed, in addition to his long list of U.S. honors, which include membership of the Institute of Medicine of the National Academy of Sciences, a Distinguished Scientist Award from the American College of Cardiology, and both Distinguished Scientist and Gold Heart Awards from the American Heart Association, Willerson has also been elected a Fellow in the Royal Society of Medicine in the UK; he has been made an honorary member of cardiology societies in Peru, Spain, Greece, Venezuela, Chile, and Japan;, he has won the Most Outstanding Cardiologist Award from the Cardiovascular Society of Shanghai, China; and he is the current President of the International Academy for Cardiovascular Sciences based in Winnipeg, Canada.

Willerson's far-reaching fame is in part due to his research, which has included the elucidation of mechanisms that cause coronary heart disease to convert from stable to unstable,[1,2] the detection and treatment of vulnerable atherosclerotic plaques,[3,4] the discovery of genes and proteins responsible for cardiovascular disease,[5,6] and, more recently, the treatment of heart failure patients with stem cells.[7,8]

And Willerson's renown is also due to his strong natural leadership. He is currently the President and Medical Director of the Texas Heart Institute in Houston. Before that, he was President of The University of Texas Health Science Center in Houston (where he remains the Edward Randall III Professor in Internal Medicine) and Director of the Cardiology Division at The University of Texas Southwestern Medical School in Dallas, and before that, he was the Director and Principal Investigator of the National Heart, Lung, and Blood Institute's Specialized Center of Research at UT Southwestern Medical School. He was also the longest-serving Editor-in-Chief of *Circulation*, and converted the journal from a monthly to a weekly publication in print and online. He also currently serves as a Senior Consulting Editor for *Circulation Research*.

In a recent interview, Willerson explained that his achievements in cardiology have been attained through unfailing commitment and a lot of hard work, as well as quite a bit of swimming.

Both Your Parents Were Doctors, Correct?

They were. My father was a general practitioner, and my mother was an anesthesiologist. She must have been among the first women doctors in Texas.

Did Your Parents' Careers Influence Your Own?

They did, but not because of anything they said, or insisted on. I would accompany my father on house calls and I would

go to the hospital with my mother. I saw the great joy that they got from caring for patients, and the appreciation of the patients for their care and compassion.

Because of that I never really thought about any other career than medicine.

Never?

No. I never thought about doing anything other than being a doctor. I pursued a degree in biology, and was a premed major right from the start. I was really committed and the only question in my mind was whether I was smart enough. So I worked hard.

I attended The University of Texas at Austin on a four-year swimming scholarship, so I worked hard at swimming too, since it was paying for my education.

You Were State Champion, Were You Not?

Yes, I won five firsts in the state swimming meet as a senior in high school.

At the university, the swimming kept me out of trouble because every day we would get up at 5 AM and swim, then swim again at 2:00 in the afternoon for another 3 hours. At the end of all that, I didn't have much energy for anything other than trying to get into medical school.

Besides Your Parents, Another Doctor Influenced Your Career ...

Yes, Dr Denton Cooley—the famous heart surgeon. He came to San Antonio when I was 14, and my mother and father insisted that I go with some doctors to pick him up from the airport. That didn't seem like such a good idea to me, but they wouldn't let me out of it. So I went along, and afterward, we returned to one of the doctor's homes. I was introduced to Dr Cooley, and I thought, good, this will be the fastest meeting in history, and I won't bother him any further, but it wasn't. He spent about 30 or 40 minutes with me. He wanted to know what I was interested in and what I had done to that date, which of course wasn't much. When he learned I was interested in medicine, he wanted to help.

Later, when I was studying at the Baylor College of Medicine I met him again, and I spent the summer of my third year in medical school in his operating room.

Later still, when I was offered the job of Chairman of Medicine at The University of Texas in Houston, he called me and said he wanted me to have a second job. He wanted me to be the Director of the cardiology research programs at the Texas Heart Institute. So I did both.

In 2000, I became President of The University of Texas Health Science Center, Houston. And in 2004, Dr Cooley asked me to succeed him as President of the Texas Heart Institute. I couldn't at the time because I had not completed my promises to The University of Texas. He said, Ok, you'll be President Designate. We did that for four years, and then I stepped down as President of the UT Health Science Center and became President of the Texas Heart Institute, which I have been now for 2.5 years.

Why Were Your Parents So Insistent That You Meet Dr Cooley?

That's something I have thought about a lot. I suspect that they wanted me to see someone who had achieved what Dr Cooley had. I was already very interested in medicine, so there wasn't any need to help me decide about my career. They didn't know him, they only knew of him, so I imagine they hoped he might spend a few minutes with me and advise me, but it turned into much more than that. It was the beginning of a friendship that ultimately led to my being at the Texas Heart Institute many years later and succeeding him as President.

I have some strong spiritual beliefs, too, and I don't think that was an accident. I think it was intended to occur.

Was It Dr Cooley That Sparked Your Interest in Cardiology?

I first became interested in cardiology at Baylor College of Medicine through Dr Cooley, and also Dr Michael DeBakey, who were both teachers of mine. Then, at the Massachusetts General Hospital, where I spent 5 years in training, there were also several outstanding cardiologists. Chief among them were Dr Roman DeSanctis and Dr Edgar Haber. Dr DeSanctis was one of the foremost clinical cardiologists in the country, and Dr Haber was a combined immunologist and cardiologist. They were both inspirational and very supportive of me. It was because of their influence that I came to believe I could be an educator, a physician, and also be involved in discovery. I wanted to do all three.

Heart and vascular disease are the major killers of men, women, and children in our country, and in virtually every major country in the world. I wanted to be someone who would contribute to the prevention of heart and vascular disease.

What Is Your Proudest Career Moment?

There have been a number. I have been very fortunate. In a generic sense, as Director of Cardiology at UT Southwestern, as Chairman of Medicine at UT Houston, as President of the UT Health Science Center, and now as President of the Texas Heart Institute, I'm proud to have had the opportunity to help fashion environments for educational programs, for research programs, for clinical care programs, and to have provided the energy, and some of the assistance, and to have recruited others who could do the same. I'm proud of the high quality effort in all of those areas and the very high quality outcomes.

In a more specific sense, I am proud of my research work with my colleagues, first, in Dallas at UT Southwestern and now, at the Texas Heart Institute. We have identified mechanisms responsible for the development of unstable angina and acute myocardial infarction. More recently we have developed the ability to detect atherosclerotic plaques that are vulnerable, ie, that are likely to rupture and lead to a heart attack, and also we have developed methods that allow one to see areas of heart attack and measure its size by various imaging procedures. Even more recently, I am proud of our work in treating patients with severe heart failure and coronary heart disease with their own adult stem cells. We were the first in the world to do this.

We are working very hard now with the goal of ultimately regenerating the whole human heart from stem cells. I think in the years to come, the entire human heart will be regenerated from stem cells and that adult human stem cells will be

part of that regenerative process. So too will converted uncommitted cells in the body that are transformed into heart muscle cells.

How Hard Do You Work?

Hard. One can't really do anything of any significance without devoting oneself to the task and working hard. My days are 17 to 18 hours, a little less on Sundays.

The care of patients is a great privilege. People put their lives in your hands, particularly when you're a heart doctor. Mistakes can be very harmful and critical so you just can't make them. One has to create an environment where others understand that, and hopefully are encouraged to be the very best they can be.

I've never even considered it work. It is time consuming and one devotes oneself to it and gives up certain other things, but if you really are doing it for the right reasons and the environment is right, it will be something that you really cherish.

Any Advice for Young Researchers?

One needs to give oneself to any effort of importance, and to try to pick an area that really interests that individual. One should become as well trained as possible and try to pick outstanding mentors. And if one does all of those things, one will find success. There will be disappointments, but if one's real goal is to help others, to encourage younger people to be the best, and to contribute to the development of new and better ways to help people with cardiovascular disease, there is nothing that will give one greater satisfaction.

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