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94th AATS President (2013-2014)

“Anybody can produce excellence if they are willing to have clarity of purpose and develop the ability to focus their attention.”

I grew up on an apple orchard in Jefferson City, Missouri which was the capital of the state but a relatively small town. My dad was a very busy cancer surgeon who had come from out East with an academic orientation and never stopped asking questions about cancer. He was a very strong influence on my life. I had two older brothers who were number one and number two in the family and were quite a few years ahead of me, 12 or 13 years ahead and they both went into surgery. So as I was in grade school and then in high school, they would come home from medical school and there would be a lot of talk about breast cancer, colon cancer, brain cancer, all kinds of cancers and other things they were studying. I was just a young boy but that had a tremendous influence on me. My mother also was a nurse and was very involved in education. She was president of the school board for many years. Being the eighth of ten children, I followed seven people through a single public high school. I was always being compared to my siblings, “Your sister got an A on this test and you’ve gotten a B”, something like that. I was intimately aware that I was in a pathway that they had blazed ahead of me.

My father had been at the National Cancer Institute in the late 30’s and eventually made



his way to Missouri and started his own clinic. Questions drove him. One in particular, why do cancer cells go from one organ to another? Was it just mechanical, or was there some sort of seed attraction to the soil? Lo and behold, he ordered a bunch of white Wistar rats and constructed a laboratory in our garage. At 13 or 14 years of age, it was my job to keep the tumor lines going. Every 2 to 3 weeks you had to sacrifice the rats with tumors under their breast, mash ‘em up and put ‘em into the next rat so that three weeks later, the line would keep going and going. This was always a challenge to me and at the same time I had to keep the rats fed with Purina dog chow and keep them watered by filling up the 7-up bottles we stuck in their cages. It was real training. Things had to be done because if they weren’t done, the line stopped, in which case it wouldn’t be very much fun around the house.

I didn't have a favorite course in grade school, I was just happy to keep moving forward. But when I became a high school freshman, I had a biology teacher by the name of Mr. Bayer who was incredibly inspiring. I really became connected to the information and would bring it home and talk about cell division and other things. My father would pick up on it and we would have a discussion about something usually related to cancer. During this class, my project involved a little beehive with a hose that went to the sill in my room. It was really great to sit and watch the bees fly in and out of the hive and in and out of my bedroom until one day somehow, it got knocked over. The glass broke and my bedroom was filled with bees! I had no choice. The windows went up and the bug spray flew around the room, everywhere. It was quite a mess.

I was one of those kids who came to college knowing what he wanted to do, I wanted to be a surgeon. Interesting though, I had the great opportunity to room at Wheaton College with a philosophy major. Tom and I would discuss everything from existentialism to Plato's Republic. How does the universe work? How did we get here? While I didn't major in philosophy, he really educated me in philosophy and I have continued to study philosophy and philosophers. It really enhanced my experience. Whenever we touched on philosophy in my classes or I took an advanced philosophy course like metaphysics, that would be the evening discussion with Tom. It really affected the way I looked at the world in many ways. After Wheaton, because my father had gone to Cornell Medical School and my two older brothers had gone to Cornell Medical School, there really wasn't much doubt in my mind where I was going to go to medical school. So, off it was to Manhattan.

I had the privilege of meeting my wife Linda in New York. She was a second year nursing

student and I was a first year medical student. There were a lot of things which I think fell together for Linda and me to get married. Linda has been the consistency in our home life and filled that role for the children of which we have six. She has been a tremendous supporter and great teammate. Surgical life is not always an easy life, particularly academic surgery, and there were times when you could get discouraged and down. Linda has always been there to provide a sense of encouragement and inspiration. She is also an example of one who continues to learn. Just a couple of years ago, she got her Nurse Practitioner license which has been a great inspiration to me, her continuous desire to learn. There are so many situations where you don't really know how to prioritize your time to competing needs, but the most important thing surgeons can do for their children and for their marriage is to love their children's mother or father, whichever the case would be. To keep consistency at home, the relationship between the surgeon and their spouse is most important.

After medical school, I matched at the Peter Bent Brigham Hospital. When I started my internship, we wore the white tunic and the white trousers. I was so proud. I'd been to my brother Everett's graduation speech as Chief Resident at the Mass General and my other brother's at the Peter Bent Brigham, so I already had an idea where it was going to lead. The first day that I came out of the hospital to go home, I just couldn't believe they were paying me to do this. Literally the thought occurred to me, "Why are they paying me? This is so much fun." The training was of course very rigorous. We were 2 ½ days in the hospital, then a ½ day out. It was what we called an every other night program. It was very time intense. We were obligated to be there but we wasted a lot of time occasionally not doing much that was productive, which is not so much the case nowadays with hours

restrictions. I think the challenge for the guys and gals going through it in this day and age is to be focused. I always thought I was focused, so I sometimes resented those long rambling rounds that some chief residents would lead which just kept us in the hospital unnecessarily, but I still loved it.

There were eight interns in those days and we were great friends. There wasn't so much an official mentoring program, but one of the folks that really came into my life early was John Mannick. Dr. Mannick was the Mosley Professor and Chair of Surgery at the Peter Bent Brigham. He was really very good at drawing out your ideas and letting you see the consequences of one or the other ways in which you wanted to go in surgery. He was a tremendous mentor. Also Joe Murray, who subsequently won the Nobel Prize and was Chief of Plastic Surgery at the Brigham, was a very inspiring man.¹ He was one of the first to do free flaps with microvascular anastomoses and I remember as an intern taking care of this gentleman whose flap was slowly necrosing, but still viable. One day I had the patient all ready for Dr. Murray to make rounds with all fresh dressings, everything was pure white. When Dr. Murray walked into the room he said, "This is beautiful. It's like a field of corn. It's just gorgeous." I looked at the flap and I looked at Dr. Murray and thought, "He's seeing something I'm not seeing." But that was Dr. Murray. He always saw in the work that he did, the goodness of it all. That was something that really inspired me. Dr. Richard Wilson was another great mentor. He was a surgical oncologist and a very decisive surgeon. I remember helping him do a hemipelvectomy. We were working along when all the sudden he said, "It's time to close" and we

closed. It was like within a snap of the fingers he decided that was it. It did not seem to me at the time that we were done but he had determined that we had done as much as we could, which taught me a very important lesson. In every operation, there's a time to close.

During my general surgical training I spent time in the Harvard-Thorndike Laboratories with Dr. Raj Goyal studying esophageal physiology. I became fascinated with the esophagus and wanted to focus on esophageal surgery. It dawned on me that most of the major influential esophageal surgeons were thoracic surgeons, but there were very few places in the mid to late 80's that were doing only general thoracic surgery. Most cardiothoracic programs in the U.S. were 90% cardiac, 10% thoracic. The only major program focused on general thoracic surgery was at the Toronto General Hospital where F. Griffith Pearson (70th AATS President) ran the program with Joel Cooper (84th AATS President) and Alec Patterson (90th AATS President). Dr. Mannick was very supportive to secure me a position in Toronto for training. Dr. Pearson was just an amazing, yet informal mentor, always encouraging and available to help you formulate your ideas. In Toronto, Joel Cooper helped me pick a direction to focus and Alec Patterson and I became fast friends. All three were what I would consider a master surgeon in cardiothoracic surgery.

A master surgeon is an individual who has made the best use of their experience and, this comes straight from my father, the difference between a master surgeon and someone who is average to good is not necessarily the number of the mistakes they make, but how they deal with those mistakes. Does each mistake launch you further in a positive direction, or does it erode your confidence? To be a master surgeon you've got to get in a rhythm of handling

¹ Joseph Edward Murray received the Nobel Prize in Physiology and Medicine in 1990 for organ transplantation. Dr. Murray performed the first successful human kidney transplant on identical twins on December 23, 1954.

mistakes and not beat yourself up too bad, while at the same time determining how you could have done it differently so that you know how to handle it the next time around. Many “mistakes” are really outside the scope of what we are doing, they just happen. But the master surgeon learns to focus more on how to handle the mistake and convert it from a mistake instead to a maneuver that may facilitate the next step of the procedure. The ability to focus, to get into the moment, to stop worrying about what time it is – these are traits of the master surgeon who will often look up from the table to the clock on the wall and not know whether it’s ten in the morning or four in the afternoon. They have been so focused on what they’re doing. The ability to focus I think is very important and of course preparation, knowing why you are there.

The phrase “clarity of purpose and focused attention, the essence of excellence” came to me after many years of training young surgeons while trying to understand what excellence truly means.² I looked in retrospect back to my youth and to my mentors to understand what produced excellence in what they did. The first component was that they knew why they were where they were. For example, my father, Everett Sugarbaker, knew in the evening why he was sitting at his desk. My father was in his 60’s by the time I was in high school, being at the tail end of the family, but every night before surgery I knew where he was going to be. At his desk, reviewing the anatomy and fundamentals of the operation he was going to be performing the following day. No matter how many thousands of times he’d done the case, he reviewed the anatomy the night before. His purpose was clear and when he went in the operating room, the same thing.

² “Clarity of purpose, focused attention: The essence of excellence” was the title of Dr. Sugarbaker’s AATS presidential address April 28, 2014.

He knew why he was there. I observed through my surgical journey that there were many people who didn’t always know why they were where they were. They were going through the motions, not focused and doing a lot of different things without a defined purpose. There is also the concept of “the pyramid of purpose” which is based on the concept that the more clearly you can define your purpose, the easier will become its completion. One cannot build a pyramid straight to the top, there have to be a series of layers to reach the top. In medicine, consider the cardiac surgeon who first goes to medical school, secondly decides to go into general surgery, then cardiothoracic surgery, then cardiac surgery to finally specialize in valve surgery. Discovery and innovation in valve surgery, a very refined task or purpose, becomes easier because of those foundational layers.

Once you know why you are where you are and why you are doing what you are doing, then you have to focus your attention on each individual step. It’s like having a game plan in the National Football League. You have to know your purpose and you’ve got to have a game plan and understand what each play is about. The goal is to move the ball down the field and score a touchdown but each individual has to realize that you accomplish that goal by understanding your role, your purpose, and by focusing on the execution of each individual play. The essence of excellence can be broken down into two components: clarity of purpose and focused attention. You can’t inherit excellence. It’s an exhilarating and somewhat liberating concept, anybody can produce excellence. Anybody can produce excellence if they are willing to have clarity of purpose and develop the ability to focus their attention.

Cardiothoracic surgery during my career has undergone some amazing changes. Probably

the most important change that has affected my career and many other surgeons and patients is the quiet but persistent separation between the practice of cardiac surgery and the practice of general thoracic surgery. When I returned to the Brigham after finishing my training in Toronto, there was no group of surgeons in New England focused on general thoracic surgery. Pulmonary and esophageal surgery was being done by general surgeons or cardiac surgeons as an afterthought. Dr. Mannick let me set up a new division of thoracic surgery as chief right out of my training. Dr. Mannick showed a lot of faith in his mentee. There are two major attributes that make up a good mentor. The first is they have to be able to listen and to hear the mentee out about a particular project or crossroads that mentees seem to experience frequently. "I'm at a crossroads." "Well, let's hear it. Let's focus it." Second and most important, the mentor has to believe in the mentee and the junior person has to trust that the mentor will support them, even when they screw up. That was the most powerful attribute that Dr. Mannick and Dr. Pearson shared with me, the feeling that I could be myself, that I could do my best and if things sometimes didn't go the right way, they still believed in me and we together made the course correction. Our division of thoracic surgery grew very quickly to about 13 surgeons performing over 3,000 cases annually. The board has since set up two sets of case requirements, one for the general thoracic surgeon and one for the cardiac surgeon. That has been a huge change and

patients have benefited by focusing cardiac and general thoracic surgeons on their area of interest, the top layer of their pyramid of purpose.

To keep the best and brightest interested in cardiothoracic surgery, we need to keep the questions coming. The best and the brightest minds in medicine and surgery are those that are pursuing new knowledge to solve problems and advance to the next step. I think sometimes cardiothoracic surgery can look rather mundane, whether it's just laying graft after graft or replacing the same valve over and over. Young people looking at our specialty may not see the challenges we are dealing with, the questions we are trying to answer, or the part of our specialty that creates new knowledge. We have to maintain and demonstrate the intellectual challenge of our specialty. We have to keep that front and center and define it better by asking questions in the operating room and talking to mentees about the questions that are on our minds. Sometimes the best answers come from those with the most objective perspective. On occasion, a medical student will answer, "This is what I think..." and I stop for a second, "You know what? That's amazing" and they have come up with the way we should go. It is also important to reward that person and make them feel they just made a contribution. That is something which becomes almost addictive, building new knowledge and coming up with answers to challenges. The essence of excellence.

**Interviewed January 25, 2015
San Diego, California**

Queries for cecb-01-01-28

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