

The Medical Commencement Archive

Volume 5, 2018



Huda Zoghbi, MD

University of Massachusetts
Commencement Address

Collaboration and Curiosity

Huda Zoghbi is the Ralph D. Feigin Professor of Pediatrics at Baylor College of Medicine, where she is also professor of Neuroscience and Molecular and Human Genetics. She has been an Investigator with the Howard Hughes Medical Institute since 1996. She is also the founding Director of the Jan and Dan Duncan Neurological Research Institute at Texas Children's Hospital.

Zoghbi's interest is in understanding healthy brain development as well as what goes awry in specific neurological conditions. She has published seminal work on the cause and pathogenesis of Rett syndrome and late-onset neurodegenerative diseases, and has trained many scientists and physician-scientists and is a member of several professional organizations and boards. She has been elected to the National Academy of Medicine, the National Academy of Sciences, and the American Academy of Arts and Sciences. Among Dr. Zoghbi's recent honors are the Pearl Meister Greengard Prize from Rockefeller University, the March of Dimes Prize in Developmental Biology, the Shaw Prize in Life Science and Medicine, the Breakthrough Prize in Life Sciences, Canada Gairdner International Prize, and Honorary Doctor of Science degrees from Harvard University and from the University of Massachusetts Medical School.

Chancellor Collins, Dean Flotte, Dean Lane, Dean Vitello, faculty, alumni, families, and guests, please join me in congratulating the Class of 2018 of UMass Graduate School of Nursing, UMass Graduate School of Biomedical Sciences, and UMass Medical School!

I am thrilled to share this special celebration with you and I am thrilled for all the people who have supported you so far on your journey. All the people who have taught you, mentored you, stayed up late with you, brought you food when you were sick, held your hand when you were down, and especially those who paid for your education, are all full of incredible pride and happiness right now. Shared joy is a double joy, so let's show them our gratitude.

I am deeply honored to be your commencement speaker. When I was in your shoes, graduating from medical school way back in 1979, I had little idea what the future would hold, but I certainly never imagined I would be getting honorary degrees and giving a commencement speech. Now, maybe your life has turned out just as you expected it to so far. Maybe you've been planning on being a nurse since you were in grade school; maybe you come from a medical family. Or maybe you thought you would become an English professor, like I did when I was an undergraduate, but you fell in love with science and wound up doing a PhD. Regardless of your individual path to this day, there is one thing I can predict about your future: it won't be what you expect. That might scare you or excite you. But it is a fact of life, and I want to share with you today how that has played out in my own life.

By the time I was in your seat, my life had already undergone several huge upheavals. I was born and raised in Beirut, Lebanon, a beautiful city overlooking the Mediterranean sea. My father had olive orchards and ran a business making olive oil, but he was also a lover of books and collected a huge library that I loved to browse. My parents believed in the value of education, and also in being able to take care of oneself. So although my family was very conservative and I led a very sheltered life, my mother encouraged me to become a doctor because she thought that was a better guarantee of being able to put food on the table than studying literature. I went to the American University of Beirut, the premier university in the middle east, and fell in love with biology. I thought I was living my dream when I entered medical school there. I threw myself into my studies and excelled. Except for one exam that I took after I met William, the man I would eventually marry—I was so distracted I made only a B on the test and decided I had better up my game or I would be in trouble!

Anyhow, life was idyllic. But then, in the middle of that first year of medical school, civil war erupted in Beirut. It became dangerous to go above ground between classes, so my friend and I set our sleeping bags in a closet area within the ladies' bathroom, which provided the required double walls that were mandatory for any one sleeping in the medical school building. Bombs were going off daily. Somehow we managed to finish that first year. We all kept expecting that the fighting would settle down any day, but it didn't. My parents were really worried about mine and my younger brothers' safety, so they sent us

off for the summer to stay with our older sister, who lived in the States. This separated me from my dearest friends, but it was only temporary, or so I thought. When I tried to get a flight back to Beirut in September to resume medical school, I discovered that Lebanon had closed its borders and the airport. No one was coming or going into the country. I was stuck in the United States.

I scrambled to apply to every medical school I could think of. None would let me transfer at the end of September, and the clock was ticking: the semester had already started by the time I managed to talk to the Dean at Meharry Medical College in Nashville, Tennessee. I will be forever grateful that he took the time to listen to my story and admitted me to medical school in my second year. It was October by then and I had to catch up on two months of work, but that was probably a good thing because it kept me from ruminating on the life I'd left behind and worrying about my family and friends being in mortal danger. It was especially hard to know that William was still in Beirut, going through his second year of med school as the war was intensifying.

So I focused on things I could control: I immersed myself in my studies and made the best of medical school. I sought out clerkships at other schools to broaden my experience and I applied to residency programs in pediatrics around the States. I got only one positive response to my application, and once again it was thanks to a special person who took the time to really listen. The person who was then chair of pediatrics at Baylor College of Medicine, Ralph Feigin, welcomed me with open arms and became my first American father. He remained a beloved mentor for me until his death in 2008. From him I learned true clinical scholarship. I was certain I was going to be a pediatric cardiologist, but then I did a rotation in child neurology and my attending, Marvin Fishman, opened my eyes to the wonders of the brain. Then I knew for *sure* what I was going to do: I was going to be a pediatric neurologist.

It was during my residency at Texas Children's hospital that I met a patient with a striking clinical course. Ashley had been a healthy, vibrant little girl until she turned two years of age. Then she suddenly stopped speaking, became unable to walk smoothly or use her hands to feed herself, her head growth slowed, and she started to have GI issues and other problems. The whole time she was in the exam room she kept wringing her hands in front of her heart, as if she was pleading with me to help her. It just so happened that the same month a paper in the *Annals of Neurology* described a new clinical entity called Rett Syndrome that fit Ashley to a T. The trouble was, no one had heard of the disease in the United States. It had only been described in that one European report, but the following week I saw my second Rett girl. The chart said she had cerebral palsy but she walked into the room tremulous, stiff, and wringing her hands. She was born healthy and didn't get sick until she was around two. This certainly did not fit the

picture of cerebral palsy. I decided that there had to be more patients like her, so I searched the clinic's records and I found four more girls with the same clinical picture. My colleagues and I wrote the first clinical report on Rett syndrome in the United States in 1985. The problem was that we didn't know what caused it, and we had no treatment to offer. By this time, I was growing frustrated with the major limitation of pediatric neurology, namely, that there is usually very little one can do for the patients in terms of treatment. I would go home at night emotionally drained, and it took my husband William pointing out how unhappy I was for me to have the courage to alter my path one more time. I decided that I needed to get training in genetics in order to find the cause of Rett Syndrome and other neurological diseases.

I had no research experience whatsoever, but I had my mentors and husband supporting me. I approached one of the great geneticists of our era, Art Beaudet, who happened to be at Baylor, about doing a postdoctoral fellowship in his lab, and on the basis of Ralph's recommendation, he accepted me immediately. Art mentored me in genetics and persuaded me to stay on at Baylor as an assistant professor in the genetics department.

Art knew that finding the genetic mutation that causes Rett, which is a sporadic disease, would be very hard with the technology we had at the time—and he was right, it took us 16 years from the day I met Ashley— so he insisted that I work on a more tractable problem such as a clearly Mendelian disorder. I decided to pursue the cause of the what came to be known as spinocerebellar ataxia type 1. I was working with one large family with several generations of members affected by ataxia, and I noticed that each generation developed the disease earlier than the previous one had. I also found out that a scientist at University of Minnesota named Harry Orr was working with another large family that seemed to have the same disease, and even though I was a lowly assistant professor, I decided to reach out and see if he would like to collaborate. I called him out of the blue, and, after a few moments of consideration, he accepted my invitation. Our labs worked from opposite ends of the chromosome, and within five years, both our labs found the SCA1 triplet repeat mutation on the exact same day. I'll never forget that phone conversation, how amazed and delighted we were, each of us looking at the other's data that had just been faxed. Sharing that first big discovery was one of the greatest thrills of my life, and Harry and I have been collaborating on SCA1 ever since.

I could share many more stories of collaboration and curiosity, but I think I've shared enough of my life now for you to appreciate the lessons I think I've learned so far.

First, have a plan, but be flexible within that plan. There will be storms in the ocean that is your life and you have to learn to surf each wave as it comes. My drive to be a physician was strong, and that kept me going to medical school through four years, two countries, and one war. But the people close to me—my mentors Ralph, Marv, and Art, and my husband William—helped me see more clearly what it was that I really wanted to do. They taught me *and* they helped me to listen to that little voice inside that so often gets drowned out by the noise of obligations and the fear of leaving a well-trodden path. Listen to that inner voice.

Second, listen to other people, too. Listen to your patients and their families. The single biggest complaint I hear from people about healthcare nowadays is that their physician or nurse is looking at a screen instead of at them. We all want to make a difference in peoples' lives, but sometimes the best thing we can offer our patients is our respectful attention. Thinking back to the first girls I saw with Rett, why were so many diagnosed with cerebral palsy, a diagnosis that would have been apparent at birth, when the girls were perfectly healthy the first year of life? The diagnosis didn't fit; only a physician who didn't trust the parents and didn't trust their own eyes would try to make it fit. Or, thinking back to SCA1, why would each generation of a family develop more severe disease at an earlier age than their parents' generation? Now we know the answer is a dynamic mutation, but at the time it was a puzzle. Pay attention to the reality in front of you, not the rules and models you learned in school. In 20 years, much of what you learned here will no longer be valid—so keep an open mind, and you might be one of the people who brings forth new knowledge to share with others.

Third, develop resilience. We are not born with patience, and perseverance doesn't come into play until we meet circumstances in which it is possible to give up. Resilience is like a muscle. Hard times are never fun, but they're the way we develop character.

Fourth and most important, cherish your relationships. You will have noticed that at each crucial juncture in my life there have been people who gave me opportunities. Meharry Medical College was willing to break the rules to let me transfer in mid-stream. My mentors and my patients opened my eyes and then opened their hearts to me. My collaborators and my trainees have made my career a joy. My husband William, who is a cardiologist with his own demanding career, has made our home a stress-free zone and helped me raise two beautiful children. Many other people have had a profound influence on me, and I have tried to honor their gifts by being generous in turn. I believe with all my heart that my strong relationships have enabled me to achieve the success and the happiness I've reached in my life.

As you reflect on your own paths, I am sure you can identify those who helped you get to this point. If there are fewer such people than you would like, then make it a goal to strengthen your relationships. Choose friends and loved ones who will help you become more resilient, pay closer attention, and listen to your own best self.

I wish you joy and success as you take off today, and I look forward to hearing your stories in the future.

Thank you.