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School of Engineering Convocation Speaker

May 13, 2022

As a graduate and industry advisory board member of the School of Engineering, I'm honored to return here in an unfamiliar role – as a convocation speaker.

I want to thank Dean Farris for inviting me and Maria Sorensen for working to make this happen. Most of all, I want to recognize the real stars of this show – the graduating class of 2022 – and your parents and family members who guided you to this great day. Before I go any further, I want to thank Rutgers University for providing a rigorous, accessible and affordable education for young people from backgrounds like mine – folks from families without wealth or prominence or connections.

And I suppose I should say here, because I won't find a better context – that I would like to also thank Jimmy's Grease Truck for sustaining my college years with his cheesesteak, eggs and bacon fat sandwich, though I'm still a bit bitter that they don't call it the Fat Ramsey.

So, I'm not a health fanatic. But these days, we're all concerned about health.

And, in that spirit, I want to do another shout-out to this university. Rutgers helped to devise Covid tests that offer a way out of the pandemic. This is an example of how, as engineers, we inherit the mantle of a profession that gets humanity out of crises of all kinds.

That is what today is all about. And that is why it is so important that we, as engineers, understand where we came from, where we're going and the intellectual, practical and moral understandings that must guide our journey.

But first, let's celebrate this moment.

I know you will be attending another commencement exercise for the entire university. But today is special – in many ways.

Today everyone gets to walk onstage and receive their diploma. And this is the first time since the beginning of the Covid pandemic that the convocation has been held in-person.

As Eleanor Roosevelt said during the Depression and World War II, this is "no ordinary time." And extraordinary times can call forth extraordinary accomplishments. Earning an engineering degree is always an accomplishment. But earning your degree in the midst of a global health crisis is rare indeed.

Believe me, I am in awe of your achievements. Surviving organic chemistry was hard enough for me. But my classmates and I didn't have to clear that hurdle while surviving social distancing, virtual and hybrid learning, healthcare anxieties and economic, social and political crises. Or moving back in with your parents to finish your degree over Zoom.

Back in the day, my idea of an ordeal was the great ice storm of 1994.

I fell with a backpack full of my books and slid like a turtle on my back from the SERC building to the Hill Center. Thankfully, I was all bundled up against the cold – and Instagram hadn't been invented yet for somebody to put me on blast.

Today, I'm reminded of the old saying, sometimes attributed to the environmentalist Wendell Berry: "We did not inherit our future from our ancestors. We have borrowed it from our children."

Not only as a graduation speaker but as the father of two young children, I am concerned about the world you are inheriting. Your generation may be the first to walk on Mars. But I hope and pray that you will not be the last to enjoy a functioning democracy and a livable planet.

You are coming of age amidst the emergence of a "new normal" in the aftermath of a pandemic that slowed down our economy, shuttered our schools and moved much of our lives online. And we are witnessing warfare on the edge of Eastern Europe, extreme weather and climate change around the world-- and ever-more economic, social and political turmoil here at home.

It takes an act of will, maybe even defiance. You are all survivors. Nobody has more of a right than all of you to go forward with the faith that this university gave me and my brothers – all graduates of this college of engineering. Never forget that our engineering education has prepared us to do just about anything.

Today I want to talk about four influences that inspired that faith and shaped my life: America welcomed immigrant families like mine – and many of your parents or grandparents.

An engineering education prepared me for critical thinking, problem-solving and just about any challenge that may come our way.

The legal profession taught me to think and care about society. To factor into our work the ethical implications of things we create.

And the American spirit of entrepreneurship -- the triumph of hope over risk -- created two companies for which I've worked. And it inspired me and my current colleagues to create a startup of our own.

These traditions guided my journey. And I believe they can inspire your journeys – and our nation’s – through the troubles ahead.

My parents came here without anything except a connection to ancient civilizations – and the conviction that America was their last, best hope.

My father grew up in Alexandria, Egypt, a center of Mediterranean culture, learning and religion. Its iconic Lighthouse and Library symbolized the search for knowledge of all kinds.

But, because of wars and work, he left Egypt to come to America. And on that journey, he ended up in even more turbulent place – Beirut, Lebanon, where he met my mother. My mom’s family are Canaanites – heirs to yet another Middle Eastern heritage. I was born in Beirut, during a cease-fire. And foreshadowing my American future, I was born on the 4th of July.

From Beirut, our family moved to yet another ancient center of civilization – Athens. And then we moved to Sparta, New Jersey – a small town about an hour northwest of here. So, you might say I’m a Jersey Boy, from Athens to Sparta, with roots in the homelands of Socrates – and Springsteen.

One of my dad’s first jobs in America was in a medical lab. They offered him a full scholarship to medical school. But he turned it down. He had come to America to build things. To be an Engineer.

And here’s a fun fact: his first job was as a uranium buyer for the Three Mile Island power plant in Pennsylvania. You may have heard about Three Mile Island – it’s where a terrible nuclear accident took place in 1979. I sometimes joke that it’s amazing that they let some guy from the Middle East named Rachid anywhere near a nuclear powerplant. That joke is funny -- and also not so funny -- at the same time.

And, in spite of every difficulty he faced, my father has always been an American patriot. And he was so eager for me and my brothers to become Americans in every way. He wouldn’t even speak Arabic to us at home.

At this point, you probably won’t be surprised that my wife is an heiress – not to a family fortune but to yet another ancient civilization.

I met my wife when we were both attending NYU Law School. As it happens, she also grew up here in New Jersey. She was born in India and spent her first years in Texas. Her father is an engineer. She is now the leading lawyer for Twitter. She has spent her career fighting for freedom of speech and defending the voices of millions of people around the world. People without power.

We were married in Brooklyn at the Prospect Park Melkite Catholic Church, the same place her parents had married after immigrating to this country.

The first time I went into the rectory to meet the priest, I was not sure how he'd react to the fact that I was marrying a Hindu woman. And to my surprise, behind the priest's desk, there was a huge statue of Shiva, one of the main deities of Hinduism. Shiva the destroyer, and creator of all things. It was one of the strangest experiences of my life. So many life threads coming together in one place. It turns out the priest had worked with Mother Teresa in India. When you follow your heart, you learn that this world is connected in magical ways.

As with many of you, family and work have been lodestars for my journey.

I became an engineer because I wanted to understand everything about the world. We are trained to build things. Things that not only are beautiful but that actually work, that serve humanity and survive for decades or even centuries.

And it is a blessing to be able to build things. I don't want to get all philosophical on you. But I strongly believe that what defines humanity is the act of creation. In God's image, we are creators. It is what makes us human.

Ultimately, it is your creations, the advancement of technology, your work, that will move society forward – and elevate humanity.

By building things that improve our lives.

By advancing human health through biotechnology

By automating jobs that people don't necessarily want to do and freeing us for more creative work

By helping people communicate, express themselves, connect; change humanity.

And, perhaps within your lifetimes, by making our species interplanetary.

So why did I also study law? It was a big leap for me to go to law school. I was a math and science junkie until that point, but I really wanted to explore the other side of my brain.

Like you, I had to take an engineering ethics class to graduate. I thought I was going to be bored out of my mind. But in that course, we studied the 1984 Bhopal, India gas leak and the health problems caused by working with asbestos. And we read about the legal cases resulting from these problems.

I was devastated to hear the accounts of the victims of those disasters. I came to understand that we need more people in our society like you. People who are trained as engineers. People who can help ensure that technology is put to its highest uses. To help, not hurt, the human society that they serve. People who understand that their moral compass is just as important as their professional competence.

I really missed engineering during law school, so my first job out of law school was at a technology law firm, where I worked with entrepreneurs.

But eventually, I realized I was much more like my clients than like my bosses. I wanted to build stuff. I wanted to apply new ideas to build new businesses, to make new technologies come alive. I was scared to leave my safe salary at a top law firm to go to this little company called Google. People told me I was crazy. It was one of the best decisions I ever made.

We need more entrepreneurs to do disruptive things in society, and by doing so, to bring science and technology together in a positive way.

Over the past 20 years, we have witnessed how the explosive emergence of startups like Google, where I worked, and Twitter, where my wife works, has changed the world. For several years, I was an executive at Google focused on partnerships and policies that would bring Google to every corner of the Earth. When I joined Google, we were serving about 50 billion queries a year. When I left, we had well surpassed a Trillion.

Then I joined Dropbox -- the file sharing company.

I got on board with Dropbox even earlier than I did with Google – in fact, I was the 50th employee. And so, I played a bigger part in building the company. We were the fastest Software-as-a-Service company in history to earn \$1 billion in revenue. But I'm more proud of all our work we behind the scenes to be worthy of our users' trust. To improve our security, to resist governments, to ensure that our users' information was safe. My most recent adventure has been to start a new company, Octant. You haven't heard of us yet. You will one day.

We're a therapeutics company that combines genetic engineering and computational biology to build drugs that match the complexity of human diseases.

We're doing things I could only dream about when I was studying biochemical engineering here at Rutgers. Programming living human cells to unlock key insights that will help us build a new generation of medicines.

And this all came in handy when we helped to develop a low cost scalable Covid test, just as Rutgers has done. Over a million tests have been conducted using our technology. So, what does this all teach me – and how might it be useful to you?

To conclude where I began, like most of you, I started out without wealth, connections, power or prominence. As with anyone who begins with more debts than assets, I was reluctant to take risks.

But there is a difference between your very real challenges – making rent, putting food on the table, and paying back student loans – and the “impostor syndrome” that I felt.

That you will sometimes feel. That afflicts so many high achievers from low or middle-income families and backgrounds like mine.

So much of what you imagine is holding you back is illusory. Your courage, competence and the capacity for hard work can even the odds for many of us.

Remember: Ideas are cheap; execution is what makes them real. That is what engineering – and entrepreneurship – are all about. And you don't have to found a start-up to be an entrepreneur. You can pursue new ideas at an established company or government agency.

Even in a large organization, you don't need permission to think and act creatively. A lot of the greatest ideas were things people thought were absurd. And, if you are producing and pursuing new ideas, you only need to be right once.

But, as someone said, there comes a time when ingenuity needs to degenerate into work. The future belongs to those who work harder and smarter. And unless you know you're smarter than everyone else, working hard on what you care about is going to be a big part of your success.

As you move forward from here, don't let anyone tell you wealth always wins out over work. Don't let anyone tell you you're too small to do big things. And don't let anyone tell you that America belongs only to families who are here by heritage – it also belongs to families who are Americans by choice.

Today, you and your families have good reason to celebrate. Starting this Monday – or some other Monday – you have a great opportunity to get to work.

Now I guess I should share with you that I've fantasized about giving a commencement speech like another techie from a middle-class family and a Middle Eastern heritage.

When Steve Jobs gave a graduation speech at Stanford University – which he attended but didn't graduate from – he famously concluded: "Stay hungry. Stay foolish."

As you've probably noticed, I'm no Steve Jobs. So I'll be wordier and less memorable: Take Risks. Build Things. Work hard. And have fun.