

Huda Akil
Commencement Address
June 2, 2017

President Khuri, Trustees, Families and Graduating Class of 2017,

My heartfelt congratulations to each of you-- the graduates-- and to your proud families! Today you are receiving an amazing gift, and I hope it feels wonderful.

I am thrilled to be sharing this very special day with you. For me this is beyond wonderful—receiving an Honorary Doctorate from AUB is the greatest honor of my life. AUB is an institution I love, an institution that has transformed my world and that of my entire family.

It started back in 1937, when a young man by the name of Fakher Akil, born in a tiny Syrian village near the Turkish border, was attending a French high school in Aleppo. Being at the top of his class, he was interviewed by an AUB recruiter and was all but promised admission to AUB. So, he was deeply dismayed when he lost out to someone who had a better connection. His sense of outrage led him to write an impassioned letter to the Syrian Minister of Education. He received no answer and went on to enroll in Medical School at the University of Damascus. A year later, he was heading home after a chemistry final when he heard a newspaper boy shouting that the evening edition carried the results of the latest AUB student selection. He bought the paper and was shocked to see his name on the list! It turns out that the minister of education had been impressed by his letter and track record, revived his AUB application, and recommended him for a full scholarship. This lucky young man was my father, who received a BA and MA from AUB, which led him to a PhD in Psychology from University College in London and a distinguished career during which he strove to make psychological thinking part of the mainstream Arab culture. Like my father, I received a scholarship to study at AUB, and this education opened the world to me, allowing me to pursue my dreams of becoming a scientist studying the workings of the brain.

I tell you this story because it encapsulates several ideas I hope to convey—first, to underscore the profound, transformative influence of this university on so many people, from so many walks of life, over so many decades. The other is the

power of small acts like my father’s letter—standing for yourself and having the courage to express outrage at injustice even if it seems futile. And most importantly, the power of generosity—the selfless way this minister intervened at the right moment and changed someone’s life.

Each of us is probably here, in this happy place, due to a series of small miracles that have shaped our lives, and I hope we can take a moment to simply be grateful and joyful. As I look back and you look forward, the parent in me hopes you feel this great lift that joy can bring and that you revel in it; and the neuroscientist in me wonders: “How does that happen? What just went on in your brains when you felt joy?” This thinking is automatic for me since I study the brain biology of emotions and moods. Over the years, I have tried to understand how we feel pain, cope with stress, develop addictions and succumb to chronic depression. I find it endlessly fascinating to study why we are each different in the way we react and cope, to contemplate the positive power that emotions can have in our lives, but also the price we pay for them when they become overwhelming or dysfunctional.

Sadly, we live in times where emotions are running high, and most are not positive. Anger is rising, hatred is blooming, beliefs are narrowing, tolerance is fading. It’s a vicious cycle where negativity feeds upon itself to grow ever more powerful. Indeed, this is a devastating moment in the history of my country, Syria, and a profoundly challenging moment for anyone who hails from this region. The feeling of helplessness and hopelessness can be overwhelming, and the thought of what is happening to so many children is often unbearable.

But I hang onto the idea that we each have within us a great resource that we can learn to deploy in the face of darkness—something that no one teaches us explicitly and yet is critical for our survival. It’s the art of fighting the odds and emerging not only whole, but triumphant and joyful. I call it “active resilience”. It does not mean lack of vulnerability, or insensitivity to stress, fear or pain. Rather, active resilience enables vulnerable people to use internal resources to cope with stress, bounce back, and become much stronger. Knowing that you have this ability within you reshapes your entire outlook, makes you optimistic, confident and hopeful.

The recovery of Lebanon after its long civil war is a manifestation of remarkable resilience. Active resilience is the courage of people carrying on with their lives amongst the wreckage in Syria, refugees who are finding a new path in spite of total dislocation. It is the daily heroic efforts of medical personnel and field workers who are saving lives under horrendous conditions.

Active resilience is also your secret weapon as you embark on a new phase of life—when you’re trying to redefine yourselves, balance multiple desires, fantasies and realities, hoping to fulfill yourselves while considering others, in an uncertain and complex world.

The great news is that this concept is not just theoretical—it’s biological. We have mechanisms within our brains to develop resilience. Our work in this area began by looking at the brains of people who had died with severe depression. We asked broadly: What genes show the most disrupted activity in the brains of depressed people compared to those who were not depressed? The answer surprised us -- we discovered that the most disrupted genes in depression are “growth factors”-- genes involved in brain growth and remodeling. We came to realize that depressed people lose the power to remodel their brains, and this is devastating because brain remodeling is essential—we are constantly rewiring our brains based on past experience and future expectation. This process, called neuroplasticity, is biological landscaping, literally reshaping the brain as we grow new connections we need, and prune the ones we don’t need, with growth factors acting as fertilizers that enable this remodeling. This research led us to discover that a growth factor called FGF2 is our own natural antidepressant and our own resilience factor. For instance, if we give FGF2 once, the day after birth, to baby animals who are genetically prone to depression, it makes them less vulnerable for the rest of their lives.

So, how do we harness this wonderful biology within us? My answer is threefold—a rich and socially supportive environment, something I call “emotional algebra”, and looking beyond ourselves.

A stimulating environment activates growth factors. Allowing animals to exercise and play with toys raises their FGF2 levels, accelerates the birth of new cells in certain brain areas, and makes them less anxious. For us, a rich environment can be a great education, challenging work, travel, exercise, having fun and

meaningful human interactions. Importantly, *social support* is a critical factor for brain remodeling. Highly vulnerable creatures are particularly sensitive to social support, which buffers them against stress. A baby mouse shows a drop in stress hormones if we give it just a whiff of his mother's odor on a piece of cotton. Social support is a great asset in this part of the world—families care, people are aware of each other and pay attention. The right dose of support at the right moment is incredibly powerful.

By “*emotional algebra*”, I mean the art of balancing positive and negative emotions so the positive predominates. Part of brain remodeling is re-defining expectation of what is rewarding and what is stressful. This starts by doing our homework to know ourselves. I believe there is a core to each of us that demands that we pay attention to it. I define happiness as recognizing and embracing this self, finding a path in life that is consistent with it, achieving harmony between who we are and how we live our life. This knowledge lets us manage our emotions, allows us to take charge of our lives, and stand up for ourselves, as my father did. It gives us permission to take risks that can be transformative and to have fun doing it. It helps to remember that there is a big difference between failing and being a failure. In science, we learn to fail, because we are often wrong. The spirit of adventure can be humbling as we head into the unknown. But it turns out that a track record of failing, swallowing a dose of humility but surviving to tell the tale is rather liberating. You discover that it's okay to be wrong, acknowledge it, learn from it and build from there. I hope that through this process of self-knowledge, you can hold on to your spirit of adventure and wonderment, that you will continue to be surprised and thrilled as you discover all there is to discover about life-- that you retain the belief that something cool, may be even amazing, is around the corner. This is the essence of being hopeful and staying young, and it carries its own wisdom.

But none of us live in a bubble—we live in a context that matters to our sense of self and our humanity. Social support is a two-way street, and *part of active resilience is to reach beyond ourselves to help others*. We can support our kids, especially those living in traumatic conditions to endow them with greater inner strength. We can support their families, as children absorb their emotions from their parents. And the best support in stressful and unpredictable times goes beyond providing fundamental necessities—food, water, shelter and healthcare. It involves giving people some control over what happens in their immediate

environment, a way to manage their own emotional algebra. There is nothing more stressful than loss of control and lack of predictability. When the sky is falling and the universe is mad, the ability to effect even a little bit of change in your surroundings is amazingly important. Why? Because it makes you feel empowered, it tells you that bigger change is possible-- it gives you hope.

Hope needs to be palpable and manifest in some real positive change. It is delicate and has to be kept alive. It can only be sustained if all of us, but especially you, the talented young people, are engaged—if you do not ignore the suffering of others. If you fight for humanity in all its manifestations, with whatever tools you have. Think about it—you have the power of youth, the power of a stellar higher education, the power of connections. You can choose to deploy your power not only for your own good, but to help those who are less powerful. Your efforts need not be fancy-- they simply need to be authentic. They need to engage and empower those you're trying to help. In this way, you will become the creators of small miracles that transform lives. Magically, your generous behavior will be contagious. It will spread and inspire others to do the same.

And here is the final bonus--- being engaged is not only the right thing to do, it is good for your brain. It will increase your own growth factors, and shore up your own active resilience. It is the joyful and uplifting thing to do. It elevates you from the ordinary to the extraordinary.

Carl Jung said: *"The privilege of a lifetime is to become who you truly are"*. I interpret this to mean becoming the best version of you.

That's my hope for you, and through you, it is my hope for a better world.