

Hello:

On June 13<sup>th</sup>, 2016, Dr. Jerome Nriagu (Professor Emeritus, University of Michigan) was awarded an Honorary Doctor of Science degree by the University of Alberta (one of the top universities in Canada) for his outstanding contributions in Environmental Health Sciences. Few scientists have achieved this distinction in his field. The photo below shows Dr. Nriagu being conferred with the honorary degree by Chancellor Young of the University of Alberta. His citation partially reads: "Dr. Nriagu has studied the behaviors, effects and ultimate fate of various pollutants in the environment and human body. He has contributed knowledge across several domains of environmental health sciences including water quality, risk science, environmental epidemiology and environmental injustice (health disparities). He has authored, co-authored and/or edited 30 books, an Encyclopedia of Environmental Health and over 300 peer-reviewed journal articles and book chapters ..." He is one of the most cited researchers in the world (his work has been cited over 22,400 times according to Google Scholar) in the field of environmental studies.

You can watch his commencement speech at the following web site:

<https://uofa.ualberta.ca/news-and-events/newsarticles/2016/june/jerome-nriagu-honorary-doctor-of-science>.

Here is the full text of his commencement speech

#### **JEROME NRIAGU: COMMENCEMENT SPEECH UALBERTA (06-13-1016)**

**I am very proud to receive the Honorary Doctor of Science degree from this prestigious university. Thank you so much Chancellor Young, President Turpin, Members of the Board of Trustees, distinguished alumni, and members of the faculty. I'll like to specially thank Dean Blade for the generous introduction.**

**To the parents of the graduating class, I can only imagine the mixed emotions that you are having now. Each time my child graduated from college, my feelings were a little sad, a little bit relieved and**

incredibly proud of his or her accomplishment. If you are like me, you are probably wondering why it seems like your child has gone directly from diapers to the diploma. I salute you. Moms and dads, bothers and sisters, and relatives of the graduates. You helped to make the occasion possible.

I want to add my personal word of congratulations to you, the graduates of the Class of 2016. I can tell that you are the most intelligent, the most accomplished, certainly the best looking and the greatest graduating class in the history of your faculties. Please give yourselves a round of applause for this distinction.

After graduating today, some of you will be climbing ladders and others will be taking elevators to success. When I was growing up as a poor kid in a small village in Nigeria, there were no elevators. Not even stairs to climb. My village had no cars, no telephones, no electricity, and no running water. When your world is a tiny ecosystem in the tropical rain forest of Africa, your movement up and down is constrained. You must also look sideways, backwards and around the corner for survival and opportunities. You learn early to live with the ups and downs as well as the zigs and zags in life. Life can be unpredictable but there is an African saying that where you are born is not as important as how you choose to live.

My father was a subsistence farmer and never finished high school. Until he died, he worked six days a week, come rain or shine. He would get out of bed before dawn with a smile on his face, eager to get to work in the small family farm. He never complained about being tired or about lack of material things. He treated his time in the family farm as a job and hobby. We did not have much but understood the African proverb: "A day of hunger is not starvation". Through his words and actions, he taught us to look for fulfilment and meaning in the challenges of life.

One of the earliest things I can remember while growing up was our mother telling us interesting stories when animals could talk and were able to describe their thoughts, exploits, habits and survival strategies. At the end of her story, our mother would ask: What

animal would you like to be when you grow up? My answer always was the turtle. The turtle is a smart survivor – it covers itself with a convenient shield that provides protection from preys and the elements. It is peaceful – it is not aggressive and rarely fights with other animals. It sticks its neck out only when it has to -- in order to move. What we can learn from the turtle is that there are going to be times in our lives when we have to stick our necks out. If you must stick your neck out, do it like the turtle. At the right time and for a good reason.

When I finished college in Nigeria, I arrived in the US with \$25 in my pocket and a big ambition. I began life in the new country with no family, no friends and little money. I was challenged by the cold weather, the foods and peculiar dialects and accents of the people. My thick accent and a surname that few people could pronounce were serious confounding factors. I was the only African student in the department and could not even navigate the complex course offerings and competency requirements. Just before I completed my Master of Science degree at the University of Wisconsin in Madison, the Nigerian civil war broke out. I could not go back to Nigeria so I fled to Canada. It was deja-vu all over again in the new country.

I learned in high school that all things being equal, one can accomplish anything if one puts his or her mind to it. What I had not expected when I got to the US and later Canada was that for most foreign students, all things were not equal in terms of opportunities and the learning environment. I called this the “all things being unequal” syndrome. The ATBU syndrome, in short. It is not a new disease and is not restricted to foreign students. It is a silent epidemic which few people know that they have. To deal with my own ATBU syndrome, I needed to develop a survivalist strategy which I called the 40/60 rules.

Let me first explain the 40/60 rules. They are based on the assumption that success in many life situations is likely to be 60% perspiration and 40% luck and calculated risks. Let me emphasize that the 40/60 rules are not validated scientifically. They are intuitive rationalizations. That said, I use my life as a living example of the 40/60 rule. I have spent 40% of my life in Africa and 60% of my life in

**North America. This is not intended to suggest, however, that the rule applies only to old men.**

**I applied the first 40/60 rule to my class lectures. I had been told that African students needed to study two or three times harder than the US or Canadian students. With the 40/60 rule, I only needed to put in 40% extra effort to get above average grade – which left me with time for a few parties. With just 40% extra effort, I ended up as straight A student at the University of Toronto. This rule was a life-changing discovery. If you are looking for a take home message from this 40/60 rule, it is this. Life is like a deck of cards. You can still win a game by playing smart even when you have not been dealt a winning hand.**

**The second of 40/60 rules applies to the fact that most of our ideas in science are immature, and more often than not, wrong. About 40% of what the graduating class just learned is probably wrong and the remaining 60% will become outdated sooner than you think. I am not suggesting that you should demand a refund of 40% of your tuition, which you paid for wrong ideas. I do not think the University of Alberta will listen to you. Instead you need to examine the knowledge fund you have acquired here to see which part was right and which part was wrong. One thing you should never do is lock up your knowledge fund and expect it to grow interest. It will get moldy instead. What you have acquired from this great institution is the seed of knowledge that should be planted and nurtured to be fruitful. Feed it and grow it.**

**Many of your contributions in life will not come from your core discipline or what you studied in college. They will come from disciplines that you may not have had contact with yet. This is one of the 40/60 rule that you may want to keep in mind. Assign 60% of what you read to your core discipline and 40% to topics that you are interested in. Also, 40% of your professional contacts should be with people in other walks of life. If you are a graduate in agricultural sciences, find an opportunity to talk with someone in public health, nursing, environmental studies, community medicine, human nutrition, engineering and even economics. There are potential job and research opportunities in these fields for someone with your**

degree. You just have to behave like the turtle; stick your neck out to find these opportunities.

For me, 60% of what I read was in environmental chemistry and the 40% of outside interests led me to study of the impacts of environmental pollutants on our health. This enabled me to easily transition from being a Research Scientist in Environment Canada to a professorship in Environmental Health Sciences in one of the top Schools of Public Health in the US. This career trajectory could not have been possible if I had limited my research and professional contacts to my comfort zone in Environment Canada. I always remember the saying that “A comfort zone is a beautiful place but nothing new ever grows there”. [Repeat]

I am sometimes asked if I have experienced discrimination in my profession. Don't worry, I am not offended by such questions any more than “how do you spell your name” and “where do you come from”. Seriously, I do believe that scientific ideas are gender and color blind. When you hear that lead poisoning caused the fall of the Roman Empire, do you want to know whether the idea came from an African or an Italian? Now that you know that it came from an African in diaspora (me), does that change how you feel about the idea?

There have been many occasions, however, when I have been criticized, called all sorts of names, and have even received death threats. As a strong advocate for environmental justice, there are obviously many people who do not like what I have to say or the positions that I have taken on important environmental issues. These attacks occur primarily because my ideas and research results are correct and thus represent a threat to vested interests. I consider such unprofessional rudeness to be a badge of honor.

There are also rare occasions where I could not always decide whether the disrespect was out of ignorance or prejudice. I give you a couple examples.

While I was Research Scientist in Canada, I was invited by the Russian Academic of Sciences to be a keynote speaker at a conference in Pushchino. The Organizers sent a driver with the

instruction to pick up a famous Canadian scientist from the airport in Moscow. After clearing the customs, I waited at the airport for over 30 minutes. Finally the driver came over and said let's go. Later I learned that the driver was expecting a tall, white, smart-looking Canadian scientist and only when he called to report that I was not in the plane that he was told to look for a non-white me. I chuck this experience to ignorance on what scientists in Canada look like.

Here is the second example. The first five papers I submitted to the journal, *Science*, were screened out – rejected without review. On the contrary, the first five papers I submitted to *Nature* were accepted with minor revisions. When I challenged the editorial office of *Science* with this information, my next paper was sent out for review and was accepted by the journal with minor revision. Go figure. The point of this example is that I do not shy away from challenging prejudice in our profession. And no one should. There is no 40/60 rule for discrimination. The rule should be 0/0. I have always endeavored to answer to a higher principle which says that "Excellence is the antidote to nepotism, racism and sexism". This dictum has guided my efforts in research, teaching and professional activities during the last 40 years or so.

Graduates of 2016, you have been taught that all things being equal, you can write your own ticket to the promised land. As you leave here, however, most of you will occasionally confront the question: "All things being unequal, what would you do? When faced with this ATBU syndrome, think of developing your own 40/60 or 30/70 or any other rule. You should never, never use the "all things being unequal" (ATBU) syndrome as an excuse for failing or for doing nothing.

Congratulations again to all of the graduates for your accomplishments. Thank you for letting me share this day and my perspectives with you. Good luck and may God bless all of you.

