Voices of UMass Chan podcast transcript_Marcia McNutt

National Academy of Sciences President Marcia McNutt, PhD, delivered the 52nd Commencement address at UMass Chan Medical School on June 3. Dr. McNutt also received an honorary degree during the ceremony.

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Voice over artist

Thank you for listening to the *Voices of UMass Chan*, featuring the people, ideas and advances of UMass Chan Medical School.

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Marcia McNutt, president, National Academy of Sciences

Good afternoon, everyone, and congratulations to each and every one of today's graduates.

We're here to honor the hard work and dedication you've each shown to earn the privilege of walking across this stage, receiving your degrees, and embarking on exciting careers in medicine.

To the families and friends of our graduates, thank you for being here to cheer them on.

I remember years ago when my three daughters went off to college, I thought I'd be set for life with all the professional help I'd ever need. I hoped to get one doctor, one lawyer, and one vet. Well, I did get the lawyer, and I also got all the discounted Apple products I could ever want. But when it comes to health, I'm afraid the pets and I are on our own.

Unlike my daughters, all of you have chosen careers in the medical profession. You are going to be physicians, physician researchers, or nurses, and health policy experts. You will shape the future of health in America.

There could not be a more consequential time for you to be taking on that mantle, because today, we stand at a crossroads. I see two paths ahead, and it will be up to you to determine which one we take.

Let me start with scenario one in which federal funding for biomedical research is drastically cut in favor thanks to other budget priorities by our national leaders. Because of this, America ceases to be a powerhouse in biomedical research with many of the best and brightest researchers choosing to pursue their careers elsewhere around the globe. In this future, American science might be even further stifled by federal policies that prevent publication of your research in top tier science and medical journals. This edict would further erode the visibility and the influence of American medical researchers at a time when breakthroughs continue to come fast and furious overseas, primarily from China, and it would mean that the U.S> pharmaceutical industry is constantly playing catch up to produce new cures and therapies from knowledge that has been licensed elsewhere. I worry that this future might also be one in which vaccines requirements are softened and public health programs are slashed, meaning that you as doctors and nurses will be spending a lot more time on critical and acute care, rather than keeping patients healthy to begin with. Furthermore, in this scenario, environmental issues may come a running roaring back on account of reduction in regulations about clean water, clean air and clean soil. Climate change will start to have serious public health consequences taking a heavy toll on mostly the elderly and the poor. In this first scenario, artificial intelligence may become the default doctor for those who do not have the resources to afford a living doctor. Now, what could possibly go wrong when AI takes over everyone's health advice? Well, all it would take is a few AI hallucinations for trust in that route to be undermined. But what choice do those have if they cannot afford a doctor? Well, the answer for them is clearly not going to be more doctors from overseas if we're living in a country that discourages or. Bans the best and brightest from coming here to learn medicine and possibly staying here to practice medicine, even if we desperately need more doctors in many parts of the country, I am guessing that there are few here in the audience today who would choose that scenario one future. So let me instead describe a more optimistic path that leads to a brighter future.

So, scenario number two, in this future, biomedical research in the U.S. remains the envy of the world. U.S. drug companies are the first to secure the patent rights for new therapies, resulting in health benefits for U.S. citizens, high paying jobs for working in the pharmaceutical industry and a healthy return to the U.S. economy from international patients seeking access to therapies created right here at home. In this second alternative future, precision and personalized medicine will lead to longer life expectancy for Americans. Physicians will enjoy previously unattained cure rates for diseases like cancer by matching the patient's own immunology, gene expression and other factors to customized therapies. Also in this second scenario, artificial intelligence is going to be part of our medical routine, but it will increase the time that physicians such as you can spend actually talking to your patients, because the AI will automate note taking, checking over the patient's prior history and proposing a suite of therapies for the doctors to consider. The close coupling of the work of the experts all of you with AI is going to lead to a trusted team reducing both physician error and AI hallucinations with the aging of the US population. In the second scenario, a plethora of new digital technologies will be available to allow senior citizens to remain in their homes. These new devices can provide hospital standard monitoring in a home setting with you, the medical professionals constantly being updated on the patient's status and alerted to any anomalies, thanks to all the vital signs that can be monitored from afar. Virtual health care visits will make it easy for any American to get sound round the clock. 24/7, day or night help without having to travel. After

hearing these two scenarios, you graduates might be saying, “Sure, I prefer the second one, but what is in my power to actually make that happen?” Well, you all have much more power than you may think. One reason that the dark future I described is actually a possibility is because public trust in science and scientific institutions has eroded. You may not realize that as physicians, your patients are going to view you as the face of science. Surveys show that when Americans are asked to name a scientist, they either say Albert Einstein or they say Carl Sagan, both of whom are long dead. So, when they are pressured to name a living scientist, the one name most Americans come up with is their personal physician. Your patients literally trust you with their lives, and for many, you will likely be the only STEM professional whom they will ever know. The fact gives you a noble responsibility. You are graduating here today from a world class medical school that prepares you not only to save lives, but to help save the very science that is going to make your treatments effective, you have an opportunity to explain to your patients how science works and how it is the foundation of all the tests and other procedures you will be prescribing. From this vaunted position, you can expose your patients to new treatments that come from revived trust in science and public respect for facts, share with them the way that science is the best way for us to understand the world around us and that world inside our bodies explain how we make scientific breakthroughs and discover new cures through a. Painstaking process of experimentation, analysis, modeling and how scientists constantly challenge each other to ultimately find the truth. Please tell your patients that basic research is the building block of what one day could become a shot in the arm that may save their lives. And just ask the Jafar family what science means. Science means that there is hope for a better future for you, for your families and for your patients. At the same time, I hope that you will loudly speak out against misinformation and disinformation in medical sciences and all other sciences, for that matter, help your patients and yes, sometimes even your own colleagues recognize misinformation and disinformation, because their lives depend on distinguishing truth from ideological fantasy.

And finally, given the trust that your patients put in you, I hope you will help them realize that science is a nonpartisan issue. Science is neither red nor blue. Science is the best approach ever devised by humankind to see into the future. Science benefits us all, if we just let it. Estimates are that every one dollar that is spent on scientific research returns five dollars in terms of fewer hospitalization, healthier lives, easier and more fulfilling jobs, economic expansion, a healthy environment and stronger national security. That diploma that you are all about to receive means that you understand that medicine, and also the science that underlies it, are part of your working repertoire. You will be in a unique position to share that understanding with people who trust you. I know you will all be successful having graduated from this great school, but I'm also calling on you to be great ambassadors for science. In closing, I know that most of you won't remember much of what I said today, but what I do hope that you will remember how I made you feel. I hope I've made you feel empowered and the architects for our medical future. Thank you very much. Congratulations and godspeed UMass Chan Class of 2025. Go create that better future for all of us.

Applause

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Music

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