



Ready for a Revolution

An interview with XPRIZE Foundation's Peter Diamandis, M.D.



Peter Diamandis, M.D., is an internationally renowned entrepreneur, physician, and engineer who is executive founder of Singularity University, a graduate-level Silicon Valley institution that provides insight on exponentially growing technologies and their ability to transform industries. In addition to being the founder and executive chairman of the XPRIZE Foundation, an organization that designs and operates large-scale incentive competitions intended to encourage technological development towards the benefit of humanity, Diamandis is the co-founder and vice-chairman of Human Longevity, Inc., a genomics and cell therapy-based diagnostic and therapeutic company focused on extending the healthy human lifespan. Overseeing the creation of over 20 other successful companies across his career, many involving the pursuit of space travel, Diamandis has additionally written two *New York Times* bestselling books—*Abundance: The Future Is Better than You Think*, and *Bold: How to Go Big, Create Wealth & Impact the World*. Diamandis will be keynote speaker at AMGA's 2020 Annual Conference, March 25–28 in San Diego, California. In anticipation of his presentation, *Group Practice Journal* interviewed him about the future of health care, as well as its relationship with technology and its potential benefits for the human body.

GPJ: Your biography is a bit overwhelming at first glance. You entered Harvard Medical School after graduating from MIT with a degree in molecular genetics. But while you were there, instead of diving headlong into medicine, you turned your attention to your first love, space travel, founding and overseeing several companies and projects devoted

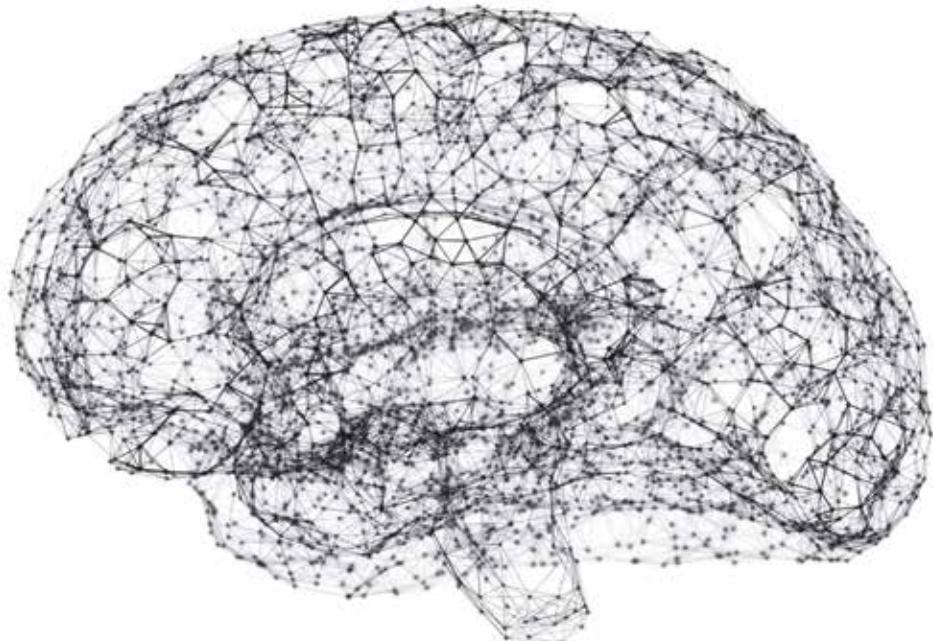
to the field. You even put your medical degree on hold to return to MIT to get a master's degree in aeronautics and astronautics. While you eventually returned to Harvard to finish your M.D., it begs the question of how your ambition and apparent obsession with space has influenced your perspective on health and medicine.

Diamandis: My interests in health and medicine and my interest in space are separate and distinct. When I decided I wanted to become an astronaut and I looked at the probability of getting accepted to the astronaut corps, the career that had the highest acceptance rate was a test pilot. Second were scientists and physicians. So, I rationalized that medicine would help me become an astronaut. Since then, I've gained a personal passion and an obsession for medicine. From a longevity standpoint and as the dad of two 8-year-olds, I'm focused on those things independent of space. When I think about my massively transformative purposes, opening up space is one, while extending the healthy human lifespan is a distinct and different focus of mine.

GPJ: In 2014, you cofounded yet another company, Human Longevity, Inc., which seeks to extend the healthy human lifespan, as well as Celularity in 2018, which seeks to augment and amplify our immunity. What is the biggest misunderstanding we have about how long the human body can sustain itself against the deterioration of age and the invasion of disease?

Diamandis: It turns out that the human body was never designed really to live past age 30 as we were evolving on the savannas of Africa a hundred thousand years ago. You would go into puberty at age 13. You'd have a baby. And by the time you were 26, your baby was having a baby. And the last thing you wanted to do—before we had abundant food, before we had Whole Foods and McDonald's—was take food out of your grandchildren's mouths if you wanted to pass your genes forward. So, the body never truly evolved for longevity. It was counter indicated for the species moving forward. Now the question is: Can we in fact reverse aging, slow aging, stop aging? And I think that, yes, there are a multitude of

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companies producing incredible therapeutics that are in phase one, phase two, phase three clinical trials and many of the top scientists—friends of mine like Dr. David Sinclair and Dr. Osman Kibar—many of these people think about aging as a disease, not as an inevitability. So, can we—given the depths of our understanding on genetics and transcriptomics and the use of artificial intelligence (AI)—begin to understand why we age and how we change that? How do we slow that? How do we stop it, even reverse it?

GPJ: You are a great proponent of technology and its disruptive advantages. When such advances progress at such a breakneck speed, particularly in the field of medicine and health, how do those within the healthcare sphere maintain a balance, where technology does not overshadow the human element of patient care?

Diamandis: I think the greatest opportunity for the impact of exponential technologies on health care is to change it from where it is now, which is *sick care*, to *health care*. Right now, we take care of patients only after they're sick, rather than maintaining their health status throughout their lives. I think exponential technologies—in particular, sensors networks, AI, augmented and virtual reality—all those things can help us maintain our health over the course of our lives so that health care is truly *health care*, taking care of us while we're healthy and maintaining health versus what we have today, which is *sick care*. The other thing is that when I watched my father in his last months and weeks of life—he was 87 years old and had Alzheimer's, cardiovascular disease, a broken hip—the doctors who came in to visit him treated him as subsystems. No one looked at him as the whole person. So, let's have technology do what it does best: the

paperwork, reading the data. And let's allow humans—doctors, nurses—do what they do best, which is connect with humans and be caring and loving and empathic.

GPJ: *What is the latest innovation or technological advancement in health care that has your attention the most? Why?*

Diamandis: Ultimately the greatest, most important technological advancement right now across the board is AI. If you think about it, health care and health and biology and medicine generate massive amounts of data. Your genome, your microbiome, your full body MRI, your coronary and lung CT, your metabolome, your proteome, all of those omics, massive amounts of data, hundreds of gigabytes of data, there's no way a human can ever understand, read, process, all of that. But AI can. AI has the potential to help us understand what's truly going on and be predictive and make health care predictive and personalized and preventative versus the crazy mess it is right now.

GPJ: *What innovation in health care are those in the industry not paying enough attention to, but should?*

Diamandis: AI, for sure. I think the other thing that the industry is not paying attention to is the fact that the future players in health care are not going to be the healthcare companies and pharmaceutical companies of today. They're going to be the data-driven, experimentalist companies like Amazon, Google, Facebook, and Microsoft, all the companies that are designed as rapid, data-driven experimentalist companies that are able to process the mass amounts of data and come up with insights. We're talking about the ability to use quantum computing in AI to come up with pharmaceuticals for the individual person. We're about to have a healthcare revolution, which is going to leave a lot of the healthcare industry behind.

GPJ: *One of the most challenging aspects of innovation in the modern age is its sheer pace. Just when you think you have a handle on some kind of new technology or advancement, some inexplicable upgrade takes places that resets your knowledgeable and understanding to zero. What tactics or strategies can you share for*

those who feel like they just can't keep up and are, as a result, too overwhelmed to embrace the change altogether?

Diamandis: We are in an exponentially growing period where there's a constant tsunami of information and change. So, how do you surf on top of this tsunami instead of being crushed by it? For me, it is constant education. I created groups called Abundance 360 and Abundance Digital, where I coach professionals and CEOs on what is in the lab and coming to market and how you make this technology usable and tap into a group of young innovators who help them facilitate this. Ultimately, it's going to be an AI software shell. All of us are going to have an AI that helps us process data. Until then, it is your community, it is yourself keeping yourself educated. This is where Singularity University and Abundance 360 serves a lot of physicians, a lot of hospital executives keeping them up-to-date.

GPJ: *You describe something you call the Six Ds—digitization, deception, disruption, dematerialization, demonetization, and democratization. When did you come to coalesce around these tenets and how have they come to shape your worldview?*

Diamandis: So, the Six Ds were something I came up with about eight years ago and became part of the premise for my books, *Abundance* and *Bold*. And there was a realization that whatever we digitized—and we've digitized everything: genetics, medicine, finance, insurance, manufacturing, information, everything—but you digitize something and it becomes ones and zeros, the cost of replicating ones and zeros in a computer or in a computer system is effectively zero, and the cost of transmitting them is effectively zero. So, things become dematerialized, demonetized, and democratized. And everywhere I looked, I saw this happening over and over and over again, and the realization is that every company or organization that has products and services should really be thinking about "how do we digitize this?" Health care is by far one of the areas that is the guiltiest of not digitizing. We still have paper forms everyone fills out. We still have handwritten medical notes and records. Digitizing this is something that makes it searchable and learnable and actionable very quickly.

GPJ: You will be presenting at the AMGA Annual Conference next March. What do you hope attendees will take home after your presentation?

Diamandis: I want them to take home a few things. Number one that we're living during most extraordinary time ever in human history. There's never been a better time ever to be alive. Number two that we're on the verge of the greatest renaissance in health care ever. And this is going to come by virtue of AI mixed in with gene therapy. We're going to begin to understand disease at a molecular level. Other revolutions coming down the pike are quantum computers, which will allow us to model pharmaceuticals on an atomic level and create drug studies for N of 1. The other thing is that the major players in the healthcare industry are likely to be Apple and Google and Facebook and Microsoft and the technology companies that are bringing brand-new tools to the marketplace.

Number three that the end result here is going to be making the individual, the patient, the CEO of their own health, that we as individuals are going to be dribbling data constantly. My genome and microbiome, my metabolome, my proteome, all of this is going to be coming into existence. Health monitoring is going to be something that is constant,

all the time, and we're going to go to stage zero medicine, where we discover disease at stage zero and intervene with it at that moment.

I guess, finally, I would say that we're heading towards a world of increasing longevity, that we're going to make 100-years-old the new 60. We're going to add 10, 20, 30 healthy years in everyone's life, and as we add say 20 years in a person's life, that person is going to intercept 20 more years of technological progress and thereby will extend their life even further. So, there is a massive transformation coming in the next 10 to 20 years, where we're going to see a real wholesale transformation of the healthcare industry with or without regulation. Regulations will be changed or ignored or modified. Just like how libraries may still exist but everyone uses Google, the same thing will be happening in some shape or form because I will choose to use these technologies versus an old style medical system because it's that much more reliable and actionable. 

Hear more from Dr. Peter Diamandis at the AMGA 2020 Annual Conference, March 25–28, 2020 in San Diego, California. For details, visit amga.org/ac20.

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