

Alzheimer's XPRIZE Media Briefing Call Transcription

September 7, 2017

Good morning and welcome, ladies and gentlemen, to the Alzheimer's disease XPRIZE editorial briefing call. I would like to inform you that this conference is being recorded today, Thursday, September 7, 2017.

It is now my pleasure to introduce to you to Ken Dychtwald from Age Wave. Please go ahead.

DR. KEN DYCHTWALD

I'm going to begin by introducing Marcus Shingles, who is on the call. He's the CEO of the XPRIZE Foundation. Marcus will explain a little bit about who XPRIZE is, what we are doing together, and then we'll launch into the content of the call. Marcus...

MARCUS SHINGLES

Greetings everyone. Thank you, Ken. As Ken indicated, I'm the CEO of the XPRIZE Foundation. Thanks for everyone for joining today. XPRIZE is a non-profit and we're the global leader in solving the world's grandest challenges—creating and managing large-scale incentive prize competitions. So we look at very significant, audacious, grand challenges facing humanity and then if there's a way to gamify innovation from small teams around the world to incentivize for them to participate in solving a grand challenge, we put that into a competition format. We then crowdsource the world for those solutions through highly leveraged prize purses, from \$5 million, \$20 million, \$30 million prize purses.

Some of the XPRIZES that we've done in the past—or are doing currently—have included a \$10 million dollar Ansari XPRIZE sub-orbital spaceflight, which is credited with launching today's \$3 billion private sector space industry. We currently have a \$30 million Google XPRIZE to land a privately funded Rover on the moon. And we recently awarded the \$10 million Qualcomm XPRIZE to bring health care into the consumer's hand.

The model behind XPRIZE is that we identify these grand challenges and then look at teams that we organize around these grand challenge concepts. These teams prepare impact proposals that they present to our community at our annual summit. It's called a Visioneers summit. At this year's summit, we have five teams, including the Alzheimer's team that you will be speaking with today. The grand challenge areas include clean air and air pollution, cyber security, democracy and voting, and industrial waste and mining.

So this October, 250 of private guests from our board of trustees and our network will come to Southern California for a four-day meeting. At that meeting, the five teams will present their impact proposals. The 250 individuals who are there for several days will evaluate and mentor, the teams and proposals and reflect on which of them can be put through an XPRIZE model.

Not every grand challenge fits in this model. When it does, it works beautifully. Dr. Philip Edgcumbe is the bold innovator and the team leader for the Alzheimer's Visioneers teams, and he's been developing a road map for fighting Alzheimer's disease. He's identified market failures that can be addressed using the XPRIZE methodology and competition. This proposal will be presented from October 5-8 at our Visioneers summit.

Today you're going to hear a story of multiple funders and a diverse prize team that is united in their efforts to fearlessly attack Alzheimer's disease. We have a dream team, no doubt about it.

When we look at these contests and put these teams together, a lot of the advocacy and subject matter to our team is critical, and we couldn't be happier with this team. We have a bestselling author and neuroscientist, a young brilliant scientific entrepreneur, a retired media and technology executive and patient advocate, and a gerontologist, author and futurist who years ago foretold the future we are now experiencing. Speaking of the futurist, please allow me to introduce Ken Dychtwald."

DR. KEN DYCHTWALD

During this hour together. I'm first going to tell you a little bit about how this all came about. Then, I'm going to introduce Lisa Genova. She's going to share her perspective on what we're doing, and then we'll hear from Philip Edgcumbe and George Vradenburg—and I'll try to tie all of it together. We'll then have some time to field some of your questions. If you have any questions along the way, please send them to questions@agewave.com.

So first, I'm a psychologist, gerontologist, and author of sixteen books—and also the founder and CEO of Age Wave. I'm one of the people who put this breakthrough team together a number of years ago.

As many of you know, I've been on the beat of this Age Wave for decades. I became interested in the subject in 1973, and over the course of those years, writing books and speaking to several millions of people worldwide, I have been trying to make sense of what happens when we have increasing longevity, declining fertility and the aging of the baby boom generation. And I say worldwide because we often think of the U.S. baby boom with 76 million births after WWII but, for example, in China there were 440 million births after the war, and that same aging phenomenon is occurring over there, perhaps even more dramatically.

Over the course of my career, as you might imagine, I've sat down with many, many world leaders, political leaders, presidents, corporate leaders, and they will often ask me in private: What does the future hold? And sometimes what they mean is, where are the opportunities, what are the businesses? What are the technologies that will be breakthrough? But often what they're concerned about is: "What are the problems ahead?"

Well, it's hard to look at the future of an aging world without realizing that Alzheimer's disease may very well be the biggest challenge we're going to be facing this century. And this coming pandemic, which you'll hear more about, is not simply "those people" or "those elderly." It's us. It's our wives, our husbands, our kids, our parents, our best friends. We are about to be pulled down by this horrific phenomenon unless there are breakthrough dollars.

Seeing what was in our path, I became incredibly frustrated over the decades with the absence of public urgency and the character and pace of science. It's not that our existing scientific infrastructure in the U.S. and around the world is not well-intended, it is. But the absence of collaboration, the absence of sharing both successes and failures, the inability to get new players into the discussion, and the absence of necessary funding for research regarding brain health is totally unacceptable—dangerous really. More recently I watched every single minute of every single debate running up to the last election, and there was no time spent—ever spent—on Alzheimer's or brain health. None.

So, five years ago, I challenged Dr. Peter Diamandis the Founder of the XPRIZE Foundation to see if we might work together to come up with an approach to build an Alzheimer's prize to hopefully advance, get funding, and put an end to this disease. Over these last five years, we've interacted with hundreds of scientists and advocates around the world, and during this past year, Philip Edgcumbe, who you'll meet in a few minutes, joined the team as our team leader. We've got a pretty serious challenge in front of us, but we are actually quite enthusiastic and optimistic that we can get this done, that we can bring an end to this disease. So now I'd like to turn to people smarter and more interesting to me.

The first speaker today is our good friend and partner on this initiative, Lisa Genova, who is a neuroscientist and best-selling author and advisor to companies and governments and activist groups around the world. She was trained in neurosciences at Harvard University. She has been called the Oliver Sacks of fiction and the Michael Crichton of brain science. She is the author of the New York Times bestselling novels *Still Alice*, *Left Neglected*, *Love Anthony*, and *Inside the O'Briens*. *Still Alice* spent 59 weeks on the New York Times best-seller's list, was translated into 37 languages, and was made into a movie that won the Academy Award for Julian Moore. Lisa has been named one of the top 50 influencers in Aging in the United States. I'd also say that several months ago, she gave a TED Talk on what can be done to prevent Alzheimer's, and there were almost immediately 2 million views.

Lisa would you share with us what this all looks like to you.

DR. LISA GENOVA

Thank you so much, Ken. I'm really honored to be part of this team and super excited about the potential of what we can do together.

For the past 20 years, Alzheimer's disease has really been my preoccupation. As a Harvard-trained neuroscientist, as a strategy consultant for biotech companies, as an advocate for better research dollars, and a novelist, who has hopefully helped millions gain a more passionate understanding what of it feels like to live with this disease.

When my grandmother was diagnosed, she was put on Aricept, which is one of only six drugs that are available today to treat Alzheimer's. But these drugs do nothing to change the course of the disease—they don't slow it or stop it.

Alzheimer's is the only disease in the ten leading causes of death in the U.S. that cannot be prevented, slowed or cured. It's 100 percent fatal. We have zero Alzheimer's survivors. Why is this?

Well, the clinical trials from the past decade and more have been designed to intervene early in the disease process, which is a great strategy, but these drug trials have failed time and again in part because the people in these trials were already symptomatic. They were way too far along in the progression of the disease, so it was too late for these drugs to be effective. Attempting to treat Alzheimer's with an amyloid intervening drug is like blowing out a match after the brain has already been set ablaze, hoping this will extinguish the fire. So why not diagnose people earlier and enroll these folks in clinical trials? Well diagnosis is still way too difficult.

When my grandmother was told she had Alzheimer's in the '90s, the world's best neurologists at the time could only diagnose this disease with 100% certainty by autopsy. Not a great option if you're still alive. The current methods for detecting Alzheimer's—PET scan or lumbar puncture—are too expensive and not covered by insurance; they're frightening; they carry their own health risks; they're inaccessible; and they're often not accurate or sensitive enough to detect the disease early enough.

Let's imagine we've actually reached the point where we've figured it all out. Imagine we have the cure or treatment that stops Alzheimer's progression or we have a prophylactic that prevents it. In order for this to be a reality, when would this treatment or medicine be administered? It has to be before the people are symptomatic or early in the disease.

Think of every single disease that was once incurable and fatal that is now cured or survivable—polio, heart disease, cancer, HIV—all of them are prevented or treated before or early in the disease. If we're going survive cancer, we need to detect it at stage 1 and not stage 4. We treat HIV and not full-blown AIDS. The treatment and cure for Alzheimer's must go hand-in-hand with early detection.

So why haven't we yet figured out how to diagnose Alzheimer's early or predict who will get it before they get it, much like we do with heart disease? The framework and system we're currently working in doesn't work. In academia, there's not enough funding to do the job and too much time is spent writing grants. It takes YEARS to make the smallest increments in knowledge. Industry can only afford to invest in one drug at a time instead of taking multiple shots on goal because clinical trials are massively expensive and lengthy. Recruiting patients to these trials stalls the process even further because the current methods of measuring Alzheimer's are difficult to access, invasive, time-consuming, and frightening. And no one's talking to each other, like Ken said, information isn't shared. Everyone is working on this puzzle in their own silos and the puzzle doesn't get solved.

Also, and interestingly, the answers for Alzheimer's might not come from neuroscientists. Think about the field of interventional cardiology as an example. This entirely new discipline of medicine came from innovations in minimally invasive devices and imaging technology that has allowed us to detect and treat early symptoms of heart disease, preventing heart attacks. These innovations didn't come from cardiologists or cardiothoracic surgeons, they came from physicists and software engineers and imaging specialists. This is why XPRIZE is so exciting and incredibly promising for Alzheimer's disease. We don't have to accept or be constrained by the existing framework.

Alzheimer's cannot be our collective destiny, the unthinkable price we must pay for longevity.

DR. KEN DYCHTOWALD

Thank you, Lisa, we'll be back to you. Let me build the story. I'd like to introduce to you to Dr. Philip Edgcumbe, who just turned 29. He's a Canadian scientist, bioengineer, and medical student. By connecting medicine, biomedical research, and entrepreneurship, Philip strives to positively impact the health of a billion people—that's his intent and purpose in life.

He's currently completing his MD, PhD in Vancouver. In the midst of all of our work, he got his PhD, and he's taken a leave before he finishes his MD. He does research with both scientists and medical doctors.

He was part of the team that built an ultra-fast two-photon microscope to image synaptic activity in neurons. In addition, he was the medical expert for a start-up company that developed an app for gaze-enhanced early Alzheimer's detection. In 2014 he received an outstanding young scientist award at the international medical image computing and computer assisted intervention conference.

In 2016 he spent the summer in Silicon Valley, where he applied more of his own wizardry to the understanding of exponential technologies and the future of medical innovation. Philip, do you want to share with us what this looks like to you?

DR. PHILIP EDGCUMBE

I would love to do that Ken. Thank you, Lisa, for framing the challenges we face in Alzheimer's disease so nicely.

As the person who has been leading the project for the past four months, my team and I have conducted over 100 interviews with experts of the NIH, Harvard, Stanford, UCSF, Europe, and around the world, and almost everyone was willing to support us in developing an Alzheimer's XPRIZE because they also agreed it is time for fresh ideas and new innovation strategies in Alzheimer's research. I am particularly humbled and proud of the advisory board that we have built to support this project.

But without further ado, I'm excited to share with all of you on this call, and the world, that we are proposing an XPRIZE Alzheimer's competition to identify a biotarget that can predict the disease and be targeted to prevent the disease. We plan to challenge teams from around the globe to develop accurate, affordable, scalable, and minimally invasive technologies for detecting the earliest signs of Alzheimer's and potential treatment targets.

This is not something that they will just do in theory. The final teams in our XPRIZE competition will come to our testing facility and prove that their technology works on human test subjects. Dr. Freda Lewis-Hall, the Chief Medical Officer at Pfizer, told us in an interview that she was excited about this XPRIZE competition because she said if we can find the right target, Pfizer and other big pharmaceutical companies and innovators from around the world can hit those targets.

Now thanks to a convergence of exponential technologies in medicine and the world-leading gamification and crowd sourcing platform that is XPRIZE, the time and tools are right for finding a major breakthrough in Alzheimer's research.

Relevant exponential technology trends are all around us. Brain imaging, genetic sequencing, bio factors, biosensors, artificial intelligence, and more. Computers are a common example of exponential technology. Humans are naturally linear thinkers. We understand that 30 steps will get us across a room but have trouble fathoming that thirty exponential steps, one, two, four, eight, etc. would take someone around the planet, 26 times

That's important for us because as soon as the technology becomes digitized its capabilities start to grow exponentially as well. Genetic sequencing is an example of this phenomenon. The cost of sequencing has dropped over 10,000 times since 2001. That is only the tip of the iceberg in terms of medical technologies that are now on an exponential price-performance trend. This means that innovators around the world have access to technology that was once only available to large governments and corporations. These newly empowered innovators are why crowdsourcing is the phenomenon that has the potential to be transformative in the fight against Alzheimer's. XPRIZE is the global leader in gamification and crowdsourcing, and anyone who achieves our competition goal will win this proposed XPRIZE. We are making a casting call to the world. We will welcome high school students, data scientists, and garage innovators from all walks of life to compete. In fact, in the Wendy Schimdt Ocean Cleanup XPRIZE, tattoo artists from Las Vegas were among the winners.

Exponential technology has already lowered the barrier to entry for innovators for Alzheimer's, and we are going to further lower the barrier through the way we structured the Alzheimer's XPRIZE. We will give competitors a common goal and make it easier for them to test their ideas in a safe way on patients.

Our goal in proposing the Alzheimer's XPRIZE is to ride the wave of exponential technology, gamification of innovation, and crowdsourcing to create a new framework for innovation and eliminate Alzheimer's from our society. We are going to unlock incredible amounts of human potential to work on Alzheimer's disease.

I would hate to look back ten years from now and regret not having done something to prevent it when a cure is within our reach. This XPRIZE competition is a chance for people outside of the Alzheimer's research world, from fields as wide-ranging as artificial intelligence, biotech, precision pharmaceuticals and physics, to take ownership and create something that will, without a doubt, make a better life for you and your loved ones. There's no greater urgency and no greater personal imperative than to find a cure for Alzheimer's. As a younger person, moving from engineering to medicine, I see enormous potential to speed up innovation.

So to recap, our multi-million dollar XPRIZE competition will identify bio-targets that can predict the disease and be targeted to prevent the disease. Many scientists believe that the disease process begins 10 to 20 years before symptoms are noticeable. This means we have a window of opportunity, a decade or more when the

disease is at its earliest moments. Our goal is to open that window of opportunity and find targets that exist at that stage in the disease that could be impacted to prevent Alzheimer's from occurring.

We expect our prize to do so much more than generate a better means of detecting Alzheimer's. A better early detection and bio-targeting tool will turbo charge our understanding of the brain and Alzheimer's and give us a new era of disease protection, prevention, treatment, and cure.

DR. KEN DYCHTWARD

Thank you, Philip, thank you for your thoughts and also your incredible leadership of this process.

It is now my honor and pleasure to introduce my dear friend George Vradenburg. George is a Harvard-trained lawyer and a retired senior executive and legal counsel in numerous media and technology companies, including CBS, Fox, AOL, TimeWarner, and others.

After retiring, George and his wife Trish decided to aim their lives in a profoundly purposeful direction by creating and co-founding UsAgainstAlzheimer's in 2010. George was named by the U.S. Health and Human Services Secretary to serve on the advisory council on research care and services established by the National Alzheimer's Projects Act. He has testified repeatedly before Congress about the global Alzheimer's pandemic. He's also counseled world leaders and on continents around the world. He's an active leader in the World Dementia Council and the global CEO initiative on Alzheimer's and George is leading corporations all around the world to focus on this theme. He's also a member of the Council on Foreign Relations and Economic Club of Washington.

I would also say George is simply one of the most brilliant and generous human beings I've ever encountered. Rather than seeing what he can get out of what he's doing at this stage in life, he's been funding almost all of these activities. George is one of the founders of this project. George has a great mind and when you see all the movement on whatever it is around this subject, you can usually find George in the room taking charge.

GEORGE VRADENBURG

Thank you very much.

I too am proud of being on this very diverse but very passionate team to try and disrupt existing practice and change the current sluggish attitudes and business-as-usual approach to Alzheimer's. Like Lisa, Philip and Ken, I want to use the XPRIZE as a catalytic force to drive more speed and innovation to an Alzheimer's cure, for my own family, as well as families like mine and yours around the world.

Quite frankly, I don't care which company gets the patent for a cure, I don't care which researcher gets the Nobel Prize, I want everyone to win in this game because when they win, patients are going to win, individuals are going to win around the world.

The scale, cost, and impact of Alzheimer's make it one of this century's greatest health, economic, and social challenges. Today over 150 million people are estimated to be experiencing this disease globally, as victims or caregivers, at an annual cost of well over 1 percent of global economic output. And those numbers are rising. Two-thirds of the victims are in low and middle-income countries, stressing national sovereign debt quality, dampening national productivity, and potentially having a significant impact on global economic growth.

This disease is sexist. Two-thirds of the victims and caregivers are women, slowing their career and job opportunities and setting back a Women's Movement that has made so much progress over the last 40 or 50 years.

This disease is racist. African-Americans are two to three times more likely to have this disease as Caucasians and, by 2030, the majority of Americans with this disease will be African-American or Latinos.

This is a family disease—family members and caregivers are secondhand victims of this disease. The cost to families for caring for their loved one is aggravating gender and racial inequalities, exacerbating social stress. The global response to this global challenge, the global investment in research and in family support, has been anemic. In this era of innovation, now is the time for the transformative power of XPRIZE to drive the world to committing to end this disease and to serving as the catalyst to innovative new approaches to doing just that.

Lisa and Philip know that recent drug trials have had negative results because the drugs have been tested on people who already are symptomatic, when irreversible brain damage has already occurred. Newer trials aiming at cognitively normal individuals rely on business-as-usual practices, tools, and techniques.

The clinical trials now on the drawing board for cognitively normal individuals are designed to be eight to nine years long because of the difficulty, before symptoms appear, in identifying and recruiting people at risk for Alzheimer's into clinical trials who are not treatment-seeking and who have no symptoms. Clinical trials can require participants to commit to at least four to five years of treatment, not knowing whether they are on a placebo or on the active drug. These burdens are a great deterrent to participants who are cognitively normal.

Alzheimer's clinical trials are much more costly because of that duration and because of the cost of recruitment. And because it takes a very long time to actually discern whether or not a drug that is introduced in people who are cognitively normal is actually going to prevent or delay the symptoms of the disease.

So, how do you get greater speed? I'm a guy coming out of business. So I asked myself, how do we dramatically reduce the time and cost of a cure? What's the solution to this? Well, we need a better means of prevention, so intervention and targeting on a marker of successful treatment well before symptoms appear is critical so that we can cut down the length of new trials, so that we can introduce medicines in people in trials when they're asymptomatic, assess the effectiveness of medicines based on a bio-target, and reduce by multiple years the development of innovative medicines that defer and delay the symptoms of this disease.

We've learned that the earlier we detect a disease, the better our chances are of stopping it and curing it. We don't have the tools to do that with Alzheimer's yet and that's why this XPRIZE is essential. As Lisa has noted, the earlier we detect Alzheimer's, as we have with other diseases like heart disease, HIV/AIDS, and cancer, the better we're able to cure it. So now is the time to do this for Alzheimer's.

So why isn't it being done today? Lisa alluded to this, and I'll just make the point in a slightly different fashion. I work with hundreds of industry executives, academic and industry researchers, and government officials, all personally dedicated to finding a cure. Many are driven by the same loss of a loved one in their circle of friends or family as we are. They may be personally driven to find a cure for Alzheimer's, but the institutions in which they work are driven by multiple priorities, multiple constituencies, budget and authority constraints, limitations on data sharing, or other collaborative practices. There is a clear market failure when it comes to those innovations that benefit all players, but which no one player is able to develop or finance on their own.

That's where the innovative power of the nonprofit XPRIZE crowdsourcing model can bring about a powerful acceleration of a cure for Alzheimer's, and that's why I'm on this team—for my wife and my daughter.

DR. KEN DYCHTWARD

Thank you, George, thank you for everything.

Let me try to put this in perspective. As some of you know, throughout 99% percent of human history, the average life expectancy worldwide was under 18. There have always been 40 and 60 and 80-year-olds, but not very many. In fact, two-thirds of all the people who have ever lived past the age of 65 in the entire history of the world are alive today.

There's been a lot of talk recently about our Founding Fathers. At the time our Constitution was crafted, the average life expectancy in the United States was just under 36 years. There was no anticipation of an age wave by the founding fathers of our nation, and there surely was no expectation of Alzheimer's pandemics when our system was created.

Keep in mind that, until recently, most people died swiftly and relatively young, in accidents or in child birth. As a result of massive health improvements, antibiotics, immunization, patient nutrition control, the average life expectancy at birth has vaulted to 79 today, but even more interestingly, the modal age of death, the age when most people die more than any other age, is now 86 and is steadily rising. In this regard, we're living in truly uncharted territory, and longevity is humanity's new frontier.

However, although we've managed to prolong the life span, we've done far too little to expand our health span and we've got some problems coming with regard to brain span.

When I got into the field of gerontology, you would hear "well old people get dementia, what's the big deal?" We now know that Alzheimer's is not a necessary outcome of longevity. Rather it's a particular family of horrific diseases that are far more likely to occur in the later years of life. One in three people over 85 is now suffering from Alzheimer's or related dementias. With greater life expectancy and the aging of the baby boomer generation, chronic health problems for older adults will continue to rise in the years to come and Alzheimer's stands out from the rest. It's 100 percent fatal, and essentially 100 percent untreatable right now.

Overwhelmingly people of all ages are now saying that the scariest condition of long life is Alzheimer's.

When I give speeches on the longevity revolution, I often ask audiences, "would you like to live to 100?" and everybody raises their hand to say "yes." But if I then ask "no matter what?" all the hands come down. People say, "You know what? I've seen my aunt, I've seen my mom, I've seen my uncle – get decimated by this disease, and that's not a disease I want to live ten years with.

Beyond the heartache of losing yourself—or a loved one over days or years or decades, the dollar cost of Alzheimer's is massive. If we don't do anything about it, between now and the year 2050 in the U.S. alone, the cumulative cost will be \$20 trillion.

So this group, and our advisers and hundreds of neuroscientists around the country and the world, has come together to put an end to Alzheimer's disease using 21st century techniques and technologies.

When I was 30, I collaborated on a book with Dr. Jonas Salk. I was born in 1950 and was a beneficiary of his breakthroughs, he told me that in the 1940s when polio was rampant, people thought that polio was simply a part of our lives, and what we needed was more iron lungs. Salk said no, we have to stop this disease.

We have come together to stop Alzheimer's.

Over the past five years of our work, we've learned that there are three things stand in the way. First, a massive amount of hopelessness and frustration on the part of families, individuals, even the Alzheimer's community and scientists.

Second, as Lisa and George and Philip pointed out, we are troubled to see how one scientist or one company don't usually share their results with scientists in another company because they're proprietary. DARPA has a sophisticated understanding of the biosciences, but they do not share with other countries. There's no language common within the scientific protocols.

A third obstacle is the cost and timing. You would think in the 21st century that our pace of science would be faster than it was decades ago. It's not what it could be. It's time to alter not only science, but its pace and even velocity—radically.

So, utilizing the unique XPRIZE process of rewarding the winners, our prize should we advance in October, will seek to overcome these obstacles by crowdsource solutions globally. Maybe the ideas will come from a high school kid in Beijing, maybe a grandma in Guatemala or an out of work computer scientist in Iowa. By opening this challenge up to the entire world, this kind of breakthrough could dramatically reduce or eliminate the suffering of tens of millions of victims and their families, and could mitigate costs worldwide by tens of trillions of dollars.

With unprecedented global aging, unless Alzheimer's disease is stopped, and stopped soon, it will be the health, social, and financial sinkhole of the 21st century.

So we're here today to publicly announce our intent to use 21st century technology to crowdsource a path for the end of Alzheimer's and thereby change the course of history.

Before we do move into questions from our callers, one of our Braintrust councilmembers, one of the funders of this project, Ric Edelman is on the line. Ric is the chairman of Edelman Financial Services, Ric do you want to add some thoughts to this?

RIC EDELMAN

Ken, thank you very much for this call today, and for the incredible work that you and everybody else is doing in this Braintrust. As you mentioned, I've been working with you for a number of years and financially supporting the enterprise and the reason that I'm doing this is because of my work as a financial planner.

My firm Edelman Financial, for those of you not familiar, is now one of the largest investment planning firms in the country. We serve more than 35,000 families all across the country, managing \$20 billion in assets and our work as financial planners is what you expect it to be, our goal is to create a financially secure financial future.

We recognize by working with so many thousands of clients over the past 30 plus years that that financial future is often completely destroyed by Alzheimer's. And, it is not merely the patient who experiences the horrific results and implications of this dreadful, fatal disease. It is the family itself.

We discover that our clients who have a family member experiencing Alzheimer's suffer major financial losses themselves, caregiving costs, implications on their own careers, the fact that many have to give up careers or deny themselves promotions, take part-time work, and suffer dramatic expenses associated with the cost of caregiving. It is extraordinarily devastating.

And we have long recognized as financial planners that if all we're doing is helping our clients to create wealth, to get to a point in their 70s and 80s and 90s where they're oblivious to the wealth that they've accumulated because of the onset of dementia and Alzheimer's, that we are not really doing our clients the services that they truly genuinely need and that is why we have established Alzheimer's as the number one focus for our efforts.

And why my wife Jane and I are so committed in background partnering with Ken and his colleagues and fostering the development of this program through the XPRIZE organization.

And I've been working with Peter Diamandis for many years and I'm very excited and proud of the work they're doing and can envision absolutely no other project that is more fundamentally important to more people across the planet than a cure for Alzheimer's.

And I just wanted to mention this to you, to recognize that there's an incredible human toll from a financial planning perspective of a family nature, it's not merely a medical issue directly affecting the patient.

And it's a perspective that sometimes gets lost in the conversation, and that's why I simply wanted to mention it this morning.

DR. KEN DYCHTOWALD

Thank you, Ric. These are incredibly important points. Let me go to another question.

There's a question for you, Lisa. You are obviously a busy person, I think you just finished another book, the question is: "Why are you involved with this? What's the payback for you?"

DR. LISA GENOVA

Thank you, well, you know, the payback isn't for me. Why am I involved in this? I've got three kids and I have book deadlines. I write novels about people living with neurological diseases and Alzheimer's is one of them. But like I said, my entire career as a novelist started with Alzheimer's, and I've been committed to people living with Alzheimer's for 20 years now. I've advocated for folks, and like Ric, I have seen the devastating toll this disease takes on families—it can bankrupt families in all of those areas.

I used to be an academic scientist. I worked at Harvard and Mass General and NIH and I advised biotech and pharmaceutical companies, so I've seen the constraints and limitations involved there and how frustratingly slow progress is. Those scientists are some of my dearest friends and they've dedicated their lives to trying to figure this out, but the framework they're working under doesn't allow them the freedom to take big enough risks and work fast enough.

So while they might plod along and figure this out in 20, 30 years, there's no reason why we should settle for this pace or this framework. Just because this is the way research has been done, it doesn't mean that's what we need to be stuck with.

So when I met Marcus in the spring and he told me about XPRIZE, I've been so excited about the possibility for XPRIZE for Alzheimer's because it totally goes around the existing system. We can send out this casting call to the world, and get anyone who might be capable of thinking about Alzheimer's, early detection, targets for treatment, it doesn't just have to be the trained neuroscientists in a lab at Harvard. Like in interventional cardiology, it could be anyone.

I dropped what I was doing to get involved.

And I've been extremely encouraged with everything we've been doing - talking to over 100 scientists and the team that has come together is so smart, so talented, so dedicated. They've really done their homework. I feel incredibly proud to be part of this team.

I believe that at some point we'll have a cure for Alzheimer's. I'd like that point to be in the near now and not in the distant future. I believe this is possible.

And I believe that when we look back on how we got to the cure, that this XPRIZE will have been the critical step, the absolute essential step in getting us there.

DR. KEN DYCHTWARD

Thank you, Lisa. There's a question for you, George. You're involved in a lot of Washington-related movement around Alzheimer's and brain health. Why do you think the time may be right for more disruptive breakthrough than what we seem to hear from the powers that be?

GEORGE VRADENBURG

I think there's a growing recognition in both the political community and in the research community about the extraordinary impact of this disease.

The growth in the numbers of people who have the disease and, as Ric has pointed out, the impact on families financially, emotionally, and medically, as caregivers themselves with the increased stress or higher risk of getting dementia as a result of caregiving, is growing dramatically.

Congress is beginning to allocate some additional money to Alzheimer's research, not at the pace and scale that's appropriate, we still need more, but it's because Congressmen and Senators are experiencing this in their own families and they're talking about it. They're talking about it with each other, they're discovering that their colleagues are experiencing it in their families.

But I hear this around the world. We saw British Prime Minister David Cameron, for a moment when he was in office, start a World Dementia Council that has tried to bring together the world's leaders in health—scientists, industrialists, and the like. There's this growing sense at the tip of everyone's finger that this is a turning point, this is a moment in time when the scale and scope of the disease, its financial and human impact, is such that the world has to come together.

Yet, we haven't had that catalytic moment, that catalytic initiative, needed to spark this potential turning point in the disease. That's why I'm in this, because I do think XPRIZE has this history and capability of raising the awareness of an issue, singularly and dramatically, and in a transformative manner, that can bring these emerging forces together to really attack this disease.

And as Lisa has pointed out, getting a cure for this disease or a means of stopping it or slowing it by 2020 or 2025 has such dramatically different consequences than if we don't get that result until 2050.

The number of people that are dying from this disease every year is maybe 3 to 3.5 million. Compare that to malaria, compare that to tuberculosis, each at roughly a million, this is one of the biggest killers of people around the world. It is in the UK, now deemed the No. 1 killer of women. In the United States, the analysis hasn't been done, but, in my view, Alzheimer's is perhaps the biggest killer of women here as well, more than heart disease or breast cancer.

So we're talking about a disease that has impacted more families, more people. We need this catalytic project of XPRIZE to light that match to a new global movement for a cure. An Alzheimer's X Prize can do that.

DR. KEN DYCHTWARD

Thank you, George. I have a question for Philip, and also one for Marcus. Philip, let me ask you first, people are asking, is there a point now where it's known roughly how many teams you're hoping to participate once the XPRIZE launches, if it makes it is to that stage, and how many millions of dollars might be involved in the winning purse?

DR. PHILIP EDGCUMBE

Thank you. As of now, we expect to have hundreds if not a thousands of teams that are register to compete in this competition. We are intentionally designing the prize to keep the barrier of entry low many teams can compete. There will ultimately be a down selection of teams to reach the final phase where we will have 10 competitors.

We expect the total prize purse to be about \$10 million. However, we are not formally announcing the value of the prize purse until after the Visioneers conference in October.

DR. KEN DYCHTWARD

Thank you, Philip. I've got a couple of questions for you, Marcus, and we're going to close out this call.

First question is, what have you guys learned about why people participate? What drives them? Is it the money? What is it? And second question is, tell us a little bit more about XPRIZE's path in front of you, what kinds of partnerships do you have now? Are there any new affiliations, relationships?

MARCUS SHINGLES

The XPRIZE model is in practicality designing a behavioral science instrument, the thought and research of the designing instrument is to understand what motivates people, what incentives drive them. The basis for the competition is that we don't care what your resume says or what school you went to, if you can enter into the competition because you think you can create an audacious breakthrough, then you can compete.

Then what we identify are what are the incentive factors that will entice someone, maybe a Google engineer by day who spends their nights and weekends competing on an XPRIZE. There are a variety of factors, sometimes it's ego, wanting to be seen and as one of the leaders of this particular domain because of all the publicity that you get from an XPRIZE. You look at the National Geographic August issue from last month, 30 pages of the National Geographic magazine are profiling all the XPRIZE teams for a Google lunar XPRIZE. So some individuals and some teams will see that and say that's an incentive, I want to be highlighted for my expertise, my progress for being a pioneer in this domain. I know I can. I'm going to end up on the Today show.

Not just the prize purse, but if I'm thinking about competing on the Alzheimer's XPRIZE and perhaps I have an investor that always wanted to fund me on my research, well now I call up my investor and say, you know how you've been talking about investing in the space, guess what, XPRIZE, a non-profit dependent third party, just announced a major competition and we should move now because XPRIZE is going to be working with the FDA and the regulatory framework and reducing any barriers that are in place.

As an investor, if I can't make it into the second or third final rounds of the XPRIZE competition, it means I don't have the goods and you shouldn't be investing in me. There's a whole bunch of psychological factors that really generate why incentivize, why individuals compete on the XPRIZE. You've got to keep in mind XPRIZE is non-profit, so if you win the XPRIZE, you get the \$10 million and all the intellectual properties. When we did the Tricorder XPRIZE, three brothers from Philadelphia that work in the emergency room won that competition.

So we're creating the market on the back end. We're making all these connections, alliances, and advocacy and relationships. XPRIZE has a tremendous network, you know Elon Musk is doing our global learning. We have a tremendous network, not just the winning team, but even the teams that take a mean shot attempt, maybe they don't win the first, we set them up for success.

The whole goal here is a \$10 million purse, you get critical mass of diversity and rapid experimentation over the course of a year or two.

By definition you create about \$200 to \$300 million of R & D to win that \$10 million, and that's what we try to do with Alzheimer's, if we gamify this process, you get \$10 million for one team, but through that process, you get a lot of rapid experimentation. You learn as much from the failure as we do from the teams that win.

So it's one big experiment that we leverage to create huge momentum, huge R & D push, create international dialogue around the topic and that's why the incentive proposition as a methodology and instrument is successful if we design it right. We're excited to see the Alzheimer's team present in October to our network, and see if their selection at the top is one of the five that we decide to launch.

DR. KEN DYCHTOWALD

Fabulous, thank you so much, Marcus. Let me say this in closing. We're going to be living longer and longer, perhaps even much, much longer lives in the years to come.

Whether that turns out to be a triumph or tragedy is the big question. Will we have cognitive health and the capacity to live lives of dignity and vitality and contribution or will this disease be the sinkhole that swallows us up.

We recognize the audacity of what we're attempting to do here. But on the other hand, that's how great things happen, isn't it? You know the old rabbi Hillel line, If not me, who? If not now, when?

I'm grateful to our team. I'm grateful to the ten individuals and families who have been funding us, and I'm very grateful to you who have joined this call.

Thank you all, and stay in touch for news after our October event, and we hope if you have any more questions, of any of the people on this call or any of our advisers, you'll reach out to the contacts on your press release and we'll be available to talk with you further.

Speaker Bios:

Ken Dychtwald, PhD, CEO, Age Wave, founding member of Alzheimer's Breakthrough Team



Over the past 35+ years, Dr. Ken Dychtwald has emerged as North America's foremost visionary and original thinker regarding the lifestyle, marketing, health care, and workforce implications of the age wave. Ken is a psychologist, gerontologist, and best-selling author of 16 books on aging-related issues. Since 1986, Ken has been the founding President and CEO of Age Wave, a firm created to guide companies and government groups in product/service development for boomers and mature adults. His client list has included over half the Fortune 500, and his explorations and innovative solutions have fertilized and catalyzed a broad spectrum of industry sectors. During his career, Ken has addressed more than two million people worldwide in his speeches to corporate, association, social service, and government groups. Through his highly-acclaimed presentations, his breakthrough research and consulting initiatives, and his leadership within both the social science and business communities, Ken has dedicated his life to battling ageist stereotypes while promoting a new, vital, and purposeful role for life's second half

Philip Edgcumbe, PhD, 28-year old Canadian scientist, biomedical engineer, entrepreneur and medical student.



Philip Edgcumbe is an innovator, entrepreneur, scientist and doctor-in-training. By connecting medicine, biomedical research, and entrepreneurship, Philip strives to positively impact the health of a billion people. Philip is completing his MD-PhD at the University of British Columbia in Vancouver, Canada where he does research with scientists and medical doctors. He was part of a team that built an ultra-fast two-photon microscope to image synaptic activity in neurons. In addition, he was the medical expert for a start-up company that developed an app for gaze-enhanced early Alzheimer's detection. He has invented, patented and licensed a medical device and was part of two biomedical start-up companies. In 2014, Philip received the Outstanding Young Scientist award at the International Medical Image Computing and Computer-Assisted Intervention conference. In 2016, he spent the summer in Silicon Valley at Singularity University where he applied exponential technologies to medical innovation.

Lisa Genova, PhD, neuroscientist, best-selling author of *Still Alice*



Lisa Genova graduated valedictorian, summa cum laude from Bates College with a degree in Biopsychology and has a Ph.D. in Neuroscience from Harvard University. Acclaimed as the Oliver Sacks of fiction and the Michael Crichton of brain science, she is the author of the New York Times bestselling novels *Still Alice*, *Left Neglected*, *Love Anthony*, and *Inside the O'Briens*.

Lisa's writing focuses on people living with neurological diseases and disorders who tend to be ignored, feared, or misunderstood, portrayed within a narrative that is accessible to the general public. Through fiction, she is dedicated to describing with passion and accuracy the journeys of those affected by neurological diseases, thereby educating, demystifying, and inspiring support for care and scientific research. She has written about Alzheimer's disease, traumatic brain injury, autism, Huntington's disease, and ALS.

Her fifth novel, *Every Note Played*, is about ALS and will be published April 3, 2018.

George Vradenburg, Co-Founder and Chairman of UsAgainstAlzheimer's, founding member of Alzheimer's Breakthrough Team



George Vradenburg is Chairman of UsAgainstAlzheimer's, which he co-founded in October 2010. George was named by U.S. Health and Human Services Secretary Kathleen Sebelius to serve on the Advisory Council on Research, Care, and Services established by the National Alzheimer's Project Act and has testified before Congress about the global Alzheimer's pandemic. He is a member of the World Dementia Council. George and USAgainstAlzheimer's co-convene both the Leaders Engaged on Alzheimer's Disease (LEAD) Coalition and the Global CEO Initiative on Alzheimer's Disease. He and his wife, Trish, have long been dedicated members of Washington's civic and philanthropic community. George served as Chairman of The Philips Collection for 13 years, and is a member of the Council on Foreign Relations and The Economic Club of Washington. He has served in senior executive and legal positions at CBS, FOX and AOL/Time Warner. George and Trish published Tikkun Magazine for 10 years (Editor-in-Chief Rabbi Michael Lerner is Trish's brother).

Marcus Shingles, Chief Executive Officer of the XPRIZE Foundation



Marcus Shingles is the Chief Executive Officer of the XPRIZE Foundation, a non-profit founded by its Executive Chairman, Dr. Peter Diamandis. XPRIZE is the leading expert in designing and implementing innovative models that utilize gamification, crowd-sourcing, incentive competitions, and exponential technologies to solve the world's grandest social challenges. Prior to XPRIZE, Marcus was a Partner at Deloitte Consulting LLP and leader of Deloitte Consulting's Innovation Group where he worked with corporate executive teams to better understand and plan for the opportunities and threats associated with disruptive innovation driven by "exponentials" (e.g., 3d printing, block-chain, crowd-sourcing, AI) resulting from the accelerated pace of discovery, invention, and technology. At Deloitte, Marcus also championed the strategic global partnership with Singularity University, and helped establish and lead the Innovation Partnership Program with XPRIZE and SU.