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Serial entrepreneur Lisa Alderson, co-founder and CEO of Genome Medical, shares her vision for the future of medicine, along with real-world advice for those seeking to start their own company: Discover and follow your passion to ensure you stay driven through the highs and lows. Above all, venture into unfamiliar territory in order to build the confidence to embrace change.



Transcript

- [Narrator] Who you are defines how you build.. - Good afternoon, Stanford.. It's amazing to be here.. I always love it when I'm on campus.. My husband is actually a graduate of the MS&E department.. It's an honor to be here with all of you today.. As Matt said, part of the theme for today, as I'm sort of reflecting back on my roughly 20 year journey as an entrepreneur, it's very hard to encapsulate some life lessons into the shortness of today's talk.. But I will attempt to do so.. And in particular I'm gonna focus on a couple of themes.. One, kind of how an idea is born, and how you find that passion point..

And then two, the idea of adaptability.. And people often ask me, "What are characteristics that make a great entrepreneur?" And the number one item I always say is you have to be able to embrace change.. You have to sort of take that as a catalyst, be an agent for change, and frankly just be adaptable.. Most people fundamentally do not like change.. And I think as sort of a personal characteristic that's an important part of being an entrepreneur.. I'm gonna start with how do you find your passion, and how do you think about that point of passion, in that if you end up pursuing a career in an area that is passion for you, that actually turns your career into a hobby and makes it a lot more fun and engaging.. I'm first gonna share with you just a bit about my passion.. My passion has been a long and winding road to get to where I am today.. But I've now spent close to the majority of the last two decades really in the field of personalized medicine.. And more specifically, in the field of genomics..

When I started at Genomic Health around 2000, it's a very small company.. And initially I kind of asked the question, "What is genomics?" This is 20 years ago, and it was a very nascent field.. And now I think of myself as very deep in that field.. I want to share with you just a bit about why I'm passionate about genomics and why I'm passionate about genomics really fundamentally changing how we deliver healthcare today.. And I'm hoping that it may spark an interest in some of you.. I'm gonna start with a prediction.. My prediction is that within five years, every cancer patient will have genomic testing.. And that means both germ line, which is the DNA you inherit from your parents, and somatic, profiling the tumor to try to better understand and select the right therapy.. And that's gonna be a game changer in how we think about treating and diagnosing cancer patients today.. My second prediction is within about 20 years I believe virtually the majority of the US population, and perhaps the global population in developing countries, will be sequenced..

Why I believe that is that we are at an inflection point where it is so clear that the clinical utility is vastly expanding and reaching to new horizons, and that that profoundly reshapes the definition of healthcare and how we treat patients.. First I'm gonna just give you a little bit of background.. Historically, our-- First of all, we all have a genome.. It's one of the number one factors that affects our health, and yet only recently have we had the medicine, the science, and the technology to utilize that information for the benefit for patient care.. So historically this genomic information has been inaccessible.. And it's been inaccessible because it's extremely costly, or have, at least historically, been.. But this is starting to change.. And I consider us in a genomic technology revolution.. So what does that mean? On the far upper left of this graph you'll see two lines.. The red line is showing the cost to sequence a genome..

The first human genome took years, and billions of dollars, to sequence.. Now it only costs us about \$1,000 to sequence the human genome.. That decrease in the cost of sequencing is dropping far more rapidly than Moore's Law would have predicted.. The rise in sequencing is the blue chart.. The years are not very visible here.. Really, almost no sequencing occurred before the year of 2012.. That's six years.. You look at the growth in that sequencing chart.. There are very few

times in our lifetime you see a growth like that.. The last one was the adoption of the internet..

That is a dramatic rise.. And what's empowering that rise is the combination of the science, the medicine, and the technology now coming together.. The second market force that is driving this is the internet of genomics.. We're starting to see the value, that each genome taken independently has some value, but in the aggregate, the big data effect of understanding how all of that information comes together for the benefit of better diagnosing disease, better understanding treatment options, is also rapidly increasing.. And lastly, we have three billion base pairs in the human genome.. It is ultimately a finite puzzle.. And so better understanding, kind of like any puzzle, as you put some of the pieces into place, the pace of acceleration increases.. And so we're seeing this really rapid increase, even just over the last two years, three years, four years, five years.. We know a ton more today about what is causative of disease than we did five years, and then we will in the future.. So despite this rapid revolution and the advancement of the science, the medicine, and the technology, we still have a last mile access problem..

And by that I mean the following.. Having sufficient clinicians, medical practitioners, who know how to use this information is our biggest impediment.. And that's because the field has grown so quickly that we have such a small specialty area in the genetics and genomics realm.. We in fact, in this country, have only 2,000 geneticists in the entire nation.. We have about 5,000 genetic counselors, including the program here at Stanford.. And so among those experts, for a population of 330 million, that is simply insufficient.. This ultimately touches just about every area of medicine, and so ultimately your primary care doctor, your pediatrician, and OBGYN, cardiologist, neurologist, they're all going to need to know something about genomics.. But to get from where we are today in that future world is going to be a journey.. And that is the journey that I am trying to solve.. I'm trying to break down those barriers and really shepherd in this new era of genomic medicine in a really medically responsible way, but a much more efficient and scalable way than has ever been done before..

To give you a little bit on why this matters, it's estimated that about 7% of the world's population actually has a genetic disorder.. Most of that is undiagnosed.. We just simply haven't had the tools and technologies to be able to get there.. It affects cancer, cardiovascular disease, one out of 50 new live births, and virtually everybody in this room is carrying conditions as recessive carrier conditions that could affect your children or future generations to come.. Everybody in this room has markers that could predict your response to drugs.. And so in this future world of precision medicine, where we can treat the right patient, with the right drug, at the right time, that's really what leads to improved patient outcomes and reduced cost of care in the healthcare system today.. So I want you to just imagine with me for a moment the future of medicine.. First today, we largely practice medicine the same for everybody.. We have a standard of care.. In this future delivery of healthcare, instead of waiting for people to get sick, observing their symptoms, and then trying to alleviate those symptoms, we'll move into a world where it's much more proactive..

Individuals will be sequenced and we'll use that information to better understand your risk for disease.. We will use that information to get to a much more accurate diagnosis faster.. And we'll use that information to select the right drug, and to even affect your dosing.. In this future world, our genomes become much more valuable over time, and they ultimately are the gateway that enable personalized medicine.. I'd like to paint for you briefly what that future of healthcare looks like.. So welcome to Genome Medical.. This is a company that I started two years ago.. And our vision really is how do we bring genetics into everyday life.. We do that by providing expert genetic healthcare for individuals and their whole multigenerational family.. We are setup nationwide..

This is not trivial.. When you think about how many medical practices are nationwide, really just Telehealth.. Stanford is not nationwide.. If you're seen by a doctor here, they can't see your entire family, unless they come here, of course.. And yet our genome ties us together with our whole family.. And so being able to see a whole multigenerational family suddenly creates a much richer understanding of how that family could benefit.. We have just over 40 clinicians.. We are a medical practice operating out of 50 states.. We have geneticists, we have genetic counselors, we have other specialists, like oncologists, like PharmDs, pharmacists, and we have primary care doctors and care coordinators.. And that whole collective care team really sees individuals today..

I won't spend a lot of time on this.. Our leadership team really brings some of the top geneticists and genetic counselors to bare along with a business team that is very passionate about personalized medicine.. Dr.. Randy Scott, who is in the upper left next to me, he is the founder of Genomic Health, and In Vite, and Insight Genomics prior to that, and he and I have now worked together in three different companies.. Dr.. Robert Green in the upper left is our third co-founder, and he's a leading medical geneticist at Harvard Medical School and Brigham Women's Hospital.. One of the things I would say as an entrepreneur that's important is, don't run out of cash.. Raising capital, and thinking early about how do you build strength, not only amongst your team, but how do you build strength amongst your investor base, and how do they help bring the strategic value add, and network of relationships, and wire you into an ecosystem that would not be present without them.. So we're backed by Kane and Partners, Illumina Ventures, GE Ventures, Kaiser Permanente Ventures, Health Invest Equity Partners, Flywheel Ventures, and some private individual investors.. When I think about this future world, there are really two elements I'm trying to bring together..

One is that tremendous clinical expertise to first know which patients would most benefit, second, which tests to order, and third, how to interpret the resulting information to guide improvement in patient care.. But that has to come together

with real technology advantage.. And so investing in the tools and technology that enable higher efficacy and higher efficiency service delivery than has ever been done before is really part of that challenge.. We're telehealth, so everything is technology enabled.. You can go online, schedule an appointment, tonight, tomorrow, over the weekend, evening hours, weekend hours.. The convenience of that is part of really breaking down the barriers.. Because today, if you want to go see a geneticist or genetic counselor, first, they're largely at leading academic centers.. Second, the wait time can be months.. And in the case of some individuals I've heard of six months.. And so it's about ease of access, and that's really one of the problems we're solving..

I mentioned briefly the assess, select, integrate.. It's really about how do we find the patients that would benefit.. There's a stat that shows today the standard of care of clinical genetics for women who may be susceptible to hereditary breast and ovarian cancer, who meet NCCN guidelines, only about 20% of them are actually getting testing today.. And the reason for this is that the standard of care has evolved so quickly that we are just not finding those patients in the healthcare system today.. They're being overlooked.. And because of that, we're failing that population.. To just try to highlight this.. How many of you have actually had any kind of consumer genetic test? Like a 23andMe, or an Ancestry, or Helix, National Geographic.. I'd say roughly maybe 15%.. So take that now, and it's really kind of upgrading to a medical grade genetics, and that is really what allows us to better understand your risk, as well as better diagnosis, and ultimately selection of therapy..

But that consumer grade genetic testing world is also growing really rapidly.. And so if you've had testing, and you now have some insight and interest, you now have to integrate it into the healthcare delivery system, and that is a challenge.. That's what we work on.. We help hospitals, health systems, physician groups, as well as individuals, be able to understand and interpret that information.. I won't spend time on this, but let me suffice it to say that there are 7,000 inheritable disorders, and so even this small group of specialists, they really specialize in different areas.. Cancer genetics, reproductive health, cardio genetics, pediatric genetics, proactive health, pharmacogenomics.. That relates to our ability, how we respond to drugs.. And so in this process, the typical path is that we'll see a patient, we'll help them understand whether or not testing would be beneficial for them, possibly whether or not it's covered by insurance.. We then order the tests, we get the test results back, we interpret it, and we now guide to a personalized medicine plan based upon their genome.. So it's guiding to clinical care and insights that could help to prevent disease or better treat disease..

So a way to think about it is that genomics is really a lifelong journey, and there's different milestones.. Some would argue that in the future of medicine, every newborn will be sequenced at birth and we'll use that information to help improve their care.. I would argue that I think it's about revealing the right information at the right time, because there's a lot of complexity in that information.. And how do we break this down and interpret it as relevant for the newborn, for the toddler, for the four or five year old that's now hitting some milestones.. For the 20 year old, the 30 year old, the 40 year old, and how do we peel back those layers.. And so if you think about this, this is bringing together together technology.. It's a bit about big data and harnessing the power of that genome in the aggregate.. It's really bringing together the clinical actions and knowledge of what do we now do.. This is very different than, let's say, having a high cholesterol blood test and knowing definitely how to interpret and use that information.. It's extremely complex..

And so the power of harnessing genetics and genomics is that it leads to both improved patient outcomes for individuals, more personalized medicine, better treatment.. It allows us, in this world today, where we think about one standard of care for every individual.. Roughly what that means is that we're overtreating half of the population and we're undertreating half of the population, and we just don't know which half is which.. In a future world, if we can stratify that patient population and say, "You're high risk.. You're moderate risk.. You're low risk," the change of care can be quite dramatic.. And that leads to better outcomes, but it also leads to cost savings for us in our healthcare system.. So with that I will leave the background of my personal passion, but ask you a question.. The question is, if you have the opportunity to be sequenced today, would you choose to do so? It's a real question because part of that is how do you react and interpret information.. Most people I ask that question to say, well, if there was something actionable that could come out of it, that could actually change outcomes for me, then the answer is yes..

Because if I know I'm at risk for cancer and I now qualify for more active surveillance, and maybe I get my MRI instead of my mammogram so it's detected early, and therefore it's detected when it is most treatable, which means that my survival rate is much higher.. That means information is power, and I want that information.. But if it's something that I can't do anything about, then I don't know if I want that information.. I'll leave you with that question.. Would you like to be sequenced.. As you think about how to find your passion, my primary advice would be, first, obviously, spend time doing the things you love doing.. And in the journey of that finding your passion, I think a big part of that is really trying to pursue what you feel you're uniquely able to create value and add value.. And that may not be what you're intending as you're graduating.. It can be something that you sort of unfold over time.. And by turning your work into a hobby, again, I feel like, I wake up every day super jazzed about what I'm here to do..

And I'm jazzed about it because I've been touched by many individuals in my life who could benefit from this science, this technology.. And in the standard medical delivery system, it takes about 17 years to go from where we have clinical utility for a new test, or a new device, to the actual adoption.. And in that 17 years, I mean, that's a whole generation.. A lot of lives that could have been touched.. A lot of lives that could have been saved.. And this, to me, is too compelling to sit by the sidelines and not help those individuals today.. So that's my passion.. The second area I would like to highlight is as you're thinking

about how do you find this passion, I think it's equally important to be adaptable, to be adaptable to life's journey.. And for me that should take a little pressure off on the picking the right major, finding the right first job, having an entire life plan well mapped out.. I want to share with you a little bit about my journey, and how I've gone from, when I was graduating from undergrad to where I am today..

There's been one common theme throughout my career, which is that technology is really the cornerstone of innovation.. And for me I've been driven to industries where technology is driving change.. And that started in entertainment and media with the ability, through the internet, to start to repurpose content, bring it online, and really thinking about bridging to the last mile, access to the home, high speed broadband to the home.. And that really evolved, and it evolved more into peer technology and trying to solve that last mile broadband to the home with technology.. And then it further evolved and into life sciences, and specifically genomics.. And so to some extent, when I was sitting at graduation at undergrad, if you had said, 20+ years in the future you're gonna help drive the genomic revolution, I would not have thought that likely to be feasible.. I am a liberal arts undergrad from Colorado State University.. I have an MBA from Harvard Business School.. And for me that defines this vision for adaptability.. Pick up knowledge along the way..

Find your interests.. Find your passion.. Sort of take that in as it comes and be willing to really bridge to what that future might be for you.. I look at that as have kind of a directional plan.. So when I was in my early 20s I sort of had the life plan mapped out, and by the time I was in my late 20s I realized, you know, directionality here is good.. Like, it's good to be purposeful.. You clearly want to have a guide, if you will.. But I think you want to be open to opportunity along that journey.. I think you also really want to be able to accept and embrace change.. I can't tell you how many people I know that end up just kind of doing the same thing because it's comfortable..

That will not change the world.. That will not allow you to leave a mark.. By virtue of the benefit of being where you are, clearly you've demonstrated high intellect.. Clearly you've demonstrated an ability to do more.. So it's really a question of what is your purpose, what is that calling for you, and how do you want to think about leaving impact, how do you want to think about being potentially an agent for change.. And can it start with just being open to change.. I have young children, 10 year old and a 12 year old.. And I think about one of the best life skills I want to be able to give them is a willingness to put themselves outside of their comfort zone.. Because by doing that, we learn.. We acquire knowledge..

We build confidence.. As an entrepreneur, you really have to be willing to take the big leap.. Now this was the individual that jumped from 20,000 feet.. That's more courage than I have.. I will say that.. But I think being able to take the big leap and build the parachute on the way down is definitely part of a characteristic of an entrepreneur.. So I have now started, or been a part of the early stage startup team at eight companies spanning three different industries.. And like anything you do and you do frequently, there's sort of a muscle memory that you develop.. So there's some things for me, particularly when I'm person of one starting a company, or person of two, or three, and I definitely advocate for partners in starting a company because there's highs and lows, and hopefully you kind of balance each other out.. But really I see it as just that confidence, that ability to put yourself in a place outside of your comfort zone..

And having the knowledge, or at least just that sense of, you know what, I've got this.. I'll figure it out.. I may not have ever done this before, but I have the tools.. I can figure it out.. I think that's what really sets an entrepreneur apart.. If you can find your passion and you couple it with this ability to be adaptable, to be willing to take in new experiences, then you've kind of got a winning formula.. You've got a formula that allows you to maybe bring a new perspective and new ideas to the world, but it also allows you to kind of be propelled forward with your inner drive and your passion.. And that's really where ideas are born.. I will leave it with the adaptability and embracing change as one of those takeaways for me as just what makes an entrepreneur capable of changing the world is really driven off of that ability to embrace change, to be comfortable with the unfamiliar.. The last chapter in what I want to share is just about enjoying the journey..

And I think this feeds into the other two aspects, this find your passion, and willing to be adaptable.. Ultimately it takes a lot to build a company.. To start with nothing.. To have an idea.. To encourage other people to share the passion and that idea, to join you in that journey.. To find investors willing to back the idea.. And ultimately to be able to execute and drive operational efficiency that allows you to excel far above your competitors.. And so when I think about that, there will be a lot of highs.. There will be certainly some lows.. And being able to kind of celebrate the wins along the way is an important part of it..

I often find myself running what I consider to be a marathon but at a sprinter's pace.. And that's really hard to do.. That is not something that is actually sustainable over a very long period of time.. But I think when you have that passion, you're really eager and compelled everyday when you wake up, it's kind of easy to just keep going.. And yet I think you need to really calibrate on that and make sure that you take time to enjoy the journey.. So I will share just a little bit about my passions outside of building Genome Medical.. I am an avid outdoor enthusiast.. I am a world adventurer and traveler.. I have been skydiving in Colorado.. I've been jungle trucking in Malaysia..

I've been ziplining in the Bavarian Alps.. I've watched the sun rise over Angkor Wat in Cambodia and I've watched it set over the pyramids of Giza in Egypt.. And I think all of that contributes to your life experiences.. To me, life is about the accumulation of experiences you have along the way.. That's part of what makes you you.. That's part of what makes life fun..

And so sort of embrace that, and create and carve out time for yourself along the way is really important, because nobody else can do that for you.. You really have to be the one that says, "You know what? These are my boundaries," particularly as an entrepreneur.. Like let me tell you, the to-do list never ends.. There is not a point at which you say, "Great, I'm done." There's always more you can do..

Always.. And so if you let that spill over, suddenly you're working 16 hour days, seven days a week, and you're now running the marathon at the sprinter's pace.. You can't do that that long.. You can sprint, but then you've gotta take a break.. Then you can sprint, then you have to take a break.. What you can do is sprint, sprint, sprint, sprint, sprint, and just keep going.. Something will give.. And that's where you start to impact relationships.. That's where you start to impact health.. That's where-- Just not good..

And this is true not just for a career as an entrepreneur by any means.. Like this is true across the board.. But I think by virtue of being highly accomplished, high achieving individual, you're kind of at risk of the danger of just doing too much.. I would encourage you to try to place some boundaries.. Decide what works for you.. You know, is it always dinner at home, or making sure you get your workout in before you start the day.. Having 10 minutes of meditation at lunch.. Whatever it is, just make sure you're creating that carve out, and that time, and that space for yourself.. How many of you have heard the analogy of the big rocks? One, two.. Huh, interesting..

Then I'm going to share this with you.. This was not my invention.. Stephen Covey I know has talked about this, but I think the original author is a bit unknown.. But if I take this and I say, okay, does that look pretty full? Do you think that's full? It's got about six rocks in there.. So now I'm going to add just a few more.. That's a little big.. And I'm gonna add some more pebbles.. Okay, now is that full? Yeah, pretty full.. Well, not done.. Now we'll try not to spill on the computer..

But I need to shake it up.. Now we're looking pretty full.. Eh, got a little pocket in there.. Do we now say that this is full? Wait, there's more.. We should pour a little water in there.. That's gonna fill up the rest of the crevice.. Oh, it takes quite a bit of water.. How about now? Can we get anything else in that jar? Yes? Okay, what else are we gonna put in there? (audience member speaking quietly) What's that? Okay, so what's the lesson of this? - [Audience Member] Breaking down the steps.. - That's a good lesson.. Always good to break down the steps..

- Focus on the big things.. - Focus on the big things.. If I put all of that water, and sand, and pebbles, and gravel in first, it'd probably get to about here, in which case I'd actually never fit the big rocks in the jar.. So in this analogy the big rocks are the things that matter most to you.. I use this in my company.. Every quarter we have a quarterly business review.. Like, okay, what are our three big rocks? What are the three things we absolutely have to do this next quarter? What are the three things we're gonna get done for this year? Keep the eyes on the prize.. Big rocks.. If you can move those big boulders up the hill, that's what's gonna drive your value creation.. That's what's gonna help you get to the next milestone..

That's what's gonna help you demonstrate the opportunity to raise more capital because you now sort of shown your proof point.. This holds in your personal life.. If it's about family, or it's about spirituality.. Know what matters most to you, because if you just let your jar be filled up for you, it will be full, I can assure you, but you might not be doing what you want to be doing.. You might not be focused on the things that matter most to you.. Other people ask things of you.. You put pressure and things on yourself.. But unless you can be very deliberate about this is what I have to get done, this is what matters most, it's very easy to see people, particularly in a small company, but even a large company, like very busy, they have a lot to do.. But unless you're focused on the result, I need to get from point A to point B and here's how I'm gonna do it, you might not have much to show for it.. And in my company, I don't really care, if you work from Hawaii, I don't really care where you are and how much you're working..

I really don't care.. We in fact have an open vacation policy.. Unlimited.. What I do care about is are you driving results.. Are we getting to where we need to go, and are we doing that as efficiently and as effectively as we can.. And that's hard.. Back to myself, I find myself just running the marathon at the sprinter's pace, and it's because I realize I've got to get more focused, I have to pare back, I have to really think about what those big rocks are.. Sorry, I was on the wrong slide for that one.. I think just to kind of wrap that up and pause, for me it's really just about there's gonna be some highs along the journey, there's gonna be some lows.. Celebrate the wins at you go..

That's important.. Recognize those milestones.. Recognize the accomplishments.. Know your big rocks.. Keep that analogy, personal life, professional life.. And that's what I think allows you to really focus and be a value creator.. And when you take that along with the idea of adaptability and the idea of finding your passion, it allows you to think about if you see so clearly something that would make your life better, make something better for a whole bunch of people, possibly then change a whole industry, maybe even change multiple industries, that creates the internal drive, that creates the passion, that propels you forward, that lets you turn a job into a hobby and have fun doing it.. And that really is what allows you to make a meaningful life.. So with that I'm gonna wrap and open it up for some questions.. (applause) Yes..

- [Audience Member] As you painfully know, the number one reason startups fail is they don't achieve a product market fit.. And I'm sure you knew this going into your new venture.. As you reflect back on the big rocks and your thought process for how to bust through that incredibly important milestone-- You're obviously a success.. I think you've raised over \$21

million.. But that thinking had to go in from the very early formation of the company.. Can you share some of your insights into how you were able to achieve that? - Yeah.. - [Audience Member] Can you repeat the question? - So the question is how do you get to product market fit and how do you get there quickly, and can I share some insights from that.. I'm gonna step back first from Genome Medical and speak about this more holistically.. I was honored and fortunate to work at Idealab, which was one of the first technology incubators back in the dot com boom era.. So this was 1999, 2000..

And I learned a lot from Bill Gross, who is the founder of Idealab.. And one of the things I learned most from him is that idea of how do you establish that product market fit and do it very quickly.. And in the era of internet adoption for the first time, everything was kind of like, "Hey, can we sell dog food online?" "Can we sell cars online? What can we sell online?" And part of what I took from Bill was the idea that what you want to do is get as quickly as possible to the point where you have a minimal viable product.. You put that product out into the market and you just observe what happens.. The internet was this beautiful way to suddenly do kind of first hand market research without a whole lot of costs, and that kind of holds true today, particularly in app world, and other ways in which you don't have huge R&D investment up front.. And so I really learned from that.. You know, it's not initially about building the best product because then you can get in this mindset of like, "We will build it and they will come.." "And gosh, if they don't come? That's panic mode." And so how do you think about a real incremental build, and starting with this super, scrappy, easy, and if it's held together with spit and (mumbling), that's fine, because once you get to your proof point and demonstration, you may have to kind of rip it all apart, and build it again, and build it better.. But guess what? It hasn't taken a whole lot of capital to get there, and to be able to demonstrate that you now have this product market fit.. So the number one risk in starting a new company often is that, sometimes referred to as will the dogs eat the dog food..

Is there a market today for your product or service, and how do you quickly validate that? That's really the number one thing that investors will be looking to.. And certainly in the field of genomics, because we've had sort of this promise now for almost two decades, and a lot of people would say, "Well, what has come of it? It's still pretty early." And that field is still fairly nascent, but as I said, we're on kind of this growth trajectory.. And so there's a part of how do you read the market, how do you know your market timing, and how do you get that right.. I've always held true to Bill Gross' philosophy of get that minimal viable product out there as quickly as possible and assess it.. So at Genome Medical, frankly, we have a wealth and richness of opportunities.. And part of that is trying to say which markets are we gonna go after, how do we hone and get to the right product market fit, how do we start to drive adoption, because adoption is what lets you iterate in getting that product market fit right.. It's what helps you drive sort of an exceptional customer experience, and it's what ultimately allows you to hone a business model, particularly if you're building something from scratch that has never, ever been done before.. That's hard.. It's very different than saying, "Okay, I'm gonna setup the umpteenth dry cleaner." There's kind of a formula of how you might go do that.. When you're creating a whole new industry or you're creating a new market, there's no formula you're following..

You're trying to figure it out as you go along.. And that is quite complex and challenging.. Yes.. - [Audience Member] Thanks for the talk.. I have a question which is considering your company, but it's also a bigger question.. I think probably like all people starting something.. I think one of the things which is concerning me is the question of healthcare, where people get tested.. This is a really interesting for laboratory companies.. Like, someone has tested it, we know this person will have cancer in five years.. (mumbling) So this effects like the whole country in thinking about how do you deal with people, or what about the democracy of healthcare..

It's not that much the case here, but where I come from, we have a totally different idea of what healthcare should be for people, for society (mumbling) So this is my first question.. And the second question is how do you deal with the idea that if you give people the result that they might get cancer in five years, or definitely will get cancer, how do you deal with the responsibility of them having psychological effects? They might get depressed or whatever.. So there's a lot of things which I would be concerned with, at least in my company.. As well I'm wondering how do you deal with in connection to your company, but how should people deal with something like this (mumbling) - Great.. Riches of question.. The first question is really kind of a population health question, and as we think about genetics and genomics, should we be concerned about health insurance maybe having access to that information and what are the implications of that.. And then the second question is at more of a personal level, how should we be concerned, or am I concerned about, kind of empowering and enabling individuals to have information that may give them knowledge about potential increased risks for certain disease, and what are the responsibilities related to that.. So for the first one, for population health and insurance.. First, within the United States there is the Genetic Information Nondiscrimination Act which states that your employer and your health insurer cannot discriminate against you based upon your genetic information.. And so that provides some degree of protection..

There are also, though, life insurance policies and others which are not under that domain today.. And so if you're looking at a life insurance policy they may say, "Have you had any kind of genetic testing? "Were there any results to be aware of?" And most insurance can do profiling based upon understanding risks.. We do advise and counsel patients to be thoughtful about that and whether not that's something that would matter.. If you're in the field of symptomatic disease and you're trying to get to a better diagnosis and a better treatment, all of that goes out the wall.. If you have cancer, you want to address that, and any kind of genetic testing is beneficial.. That applies most under healthy, well people.. At a population health level, where we see this field going, you think about the clinical utility for genetic testing combined with the cost of genetic testing.. There's a point where those two curves intersect.. And it starts to make sense to do testing on everyone.. And I think some of

the concerns, in getting to your second part of the question about what's the obligation or responsibility to an individual..

This is part of the value of the profession of genetics, and genetic counseling in particular.. Because I view it as a personalized decision.. It's a decision that may be different for me than it would be for you.. And that decision comes down to a couple of things.. First, do you suffer from general anxiety or depression? Do you have a tendency to rethink your choices and things you've done? Some of that is a little bit getting at how do you process information, how do you think about information.. This is not deterministic.. This is not the crystal ball that says, "You're going to get name this condition " at a certain point in the future." It's really about looking at inheritable disease and causes.. And many diseases have genetics as a component to it, but maybe not the only component.. Many of you are probably familiar with the Angelia Jolie story where she went through pretty extreme measures and had a mastectomy and an oophorectomy based upon what for her was an 85% lifetime risk of getting cancer.. In that scenario, she's on one spectrum where, gosh, the information was really powerful, because her mother died of cancer, her grandmother died of cancer..

Those are stats that start to feel a little bit scary.. And it's kind of a question of, well, in that scenario are we actually more afraid of the unknown because by not knowing, you kind of feel like maybe it's there and it's ticking.. Versus by having the information that empowers you, one, through your insurance, to now actually get more active surveillance and care.. There is a scenario where you can just find that earlier and it's much more treatable.. And there's other scenarios where you decide we're gonna take really aggressive measures to prevent that disease.. So I think, again, that's really all about personal choice, and that part of our job at Genome Medical, for an individual, is to better understand how do you process that information, how do you think about the risks and benefits for you.. How would you, with anticipatory guidance, start to think about what you might do with that information? And to some extent, you don't anticipate any change in how you would think about using that information, then maybe that isn't something you feel is needed for you.. When I look at the field, the areas of opportunities that are richest, one, carrier testing.. Most people get carrier testing today when they're pregnant.. That's pretty late..

At that point your choices are pretty severely limited.. You really want to get testing when you're in your 20s, even before you're thinking about having kids.. Because we all carry risks for disease that we can pass onto our children.. It's often typically a question of the two partners and whether or not that creates a risk.. Second area is around pharmacogenomics.. Many of us are on drugs that have no efficacy, and worse, maybe down side effect.. And so if you could eliminate all the people on drugs that are not working for them, and eliminate all the adverse effects, that would be huge.. That would be huge for those individuals.. That would be huge for society.. That would be huge for cost savings..

So I think of it is, there is a responsibility.. This is an area in particular where ethics is important, and protection of the individual is important.. Our number one value at Genome Medical is really how do we put the patient first.. How are we the navigator to help that patient make the right choice for them.. Not my choice.. What's right for that individual.. Yes.. (audience member mumbling) So first question is with regards to the stones, what techniques do I use to draw up my stones.. With that, you know, for me it is about just being mindful and kind of bringing front and center the deliberateness of those choices.. With my team we go through a set of exercises, and discussions, and just thinking about, again, what matters most, what's most material, how are we gonna move the company forward, how are we gonna build that momentum..

So I think as you're intertwined with a bunch of other people, it's more important to have deliberateness in that process and to have methodologies around that process.. Remind me of your second question? - MVP.. - MVP, yes.. Thank you.. For the MVP and kind of defining what's a minimal viable product, what are some of the techniques that I use.. First, when starting a company, in fact, even before starting a company, the first thing I do is go and talk to as many people as possible.. Both possible customers, possible partners, possible vendors, possible competitors, people I might displace.. I want to better learn the dynamics in the market and the ecosystem, and what the key drivers are, what are the key opportunities.. And if you can get into really rapid cycle of market knowledge and insights, that drives innovation.. So before this company I was the chief commercial officer and chief strategy officer at a company called In Vite, which is now one of the fastest growing genetic testing labs..

And in that process, the very first thing I did the first couple of months I was there is I went and talk to as many genetic counselors, as many geneticists, as many oncologists as I could, as many cardiologists, and I was really seeking a couple of things.. One, have you ever heard of genetics? Do you order any genetic testing? If so, from who? Why? What do you like? What do you not like? If I were to build something made specifically for you, what would you want that to be? How should it be priced? What service do you need? What kind of customer support can I give you? What are your pain points? How do I solve them? And then based upon that feedback allows me to very quickly say, "Okay, how do I build that?" And that allows you to differentiate relative to others.. It allows you to maybe come up with some unique pricing, or some unique service that nobody else brings.. And then I think in terms of actually defining that MVP, really it's sort of a tradeoff of how and where can you draw the line in the sand.. And by that I mean, it needs to be robust enough that you actually have something of value to offer and you're getting a real litmus test from the market about the value of that product or service.. But it shouldn't be so overengineered that it takes you much longer to get to market.. I like to think about it as like, where we can we get in three months.. I started Genome Medical in June of 2016, and we were starting to see patients before the end of that year.. And so that, to me, for a medical practice was a pretty quick iterative cycle to get to a very minimal viable product.. Last question..

- [Audience] I see Kaiser is an investor.. Could you please tell us a couple of the suggestions they made regarding the future of the company? - Sure, one I'll just speak briefly to the investors and why we selected the investors we have.. Kane and Partners is really a crossover firm between technology and healthcare, the two pillars of strength I need in my company.. Kaiser Permanente is an integrated healthcare system, and integrated healthcare systems have been earlier adopters of genomics because they have both the value proposition as provider and as payer.. And actually, even if I look outside of the United States, there are countries I would point to, Israel being one of those, where they have adopted genetics at a very fast pace.. Every woman in Israel is eligible for hereditary breast and ovarian cancer testing, I believe when they hit 30.. So they're already in a population health approach and we are not yet there today.. And so part of it is finding early adopters.. In the case of Kaiser, really our value is how do we gain insights and learning from just being able to connect and meet with the varying providers within Kaiser.. And then GE Ventures sells to hospitals and health systems..

So again, that helps me with my market cycle of learning, and getting feedback, and input.. Illumina Ventures, and Illumina more specifically, but Illumina is almost single-handedly driving the genomics revolution by building sequencers.. So there's a lot of value for me in being part of that ecosystem.. Again, I think only by virtue of having built a number of companies have I gotten to the point where I feel much more about selection of investors as a strategic objective, and one that you need to spend a lot of time on, and make sure that your interests and theirs are kind of aligned, and that they also bring a tremendous amount of value in addition to capital.. (applause)..