Company Investment Summary

Travera
Cambridge, MA

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for Altru Institute.
June 2019

TRAVERA

A new diagnostic technology can predict how patients will respond to different drugs or drug combinations before the patients take the drugs.

Travera is using a breakthrough technology invented at MIT to measure which cancer drugs work against an individual's unique cancer. This revolutionary diagnostic test will enable oncologists to quickly determine which drugs to prescribe based on the actual responses of their patients' tumor cells.

ALTRU INSTITUTE

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OVERVIEW

Travera is using a breakthrough technology to measure which cancer drugs work against each individual's unique cancer. This revolutionary diagnostic test will enable oncologists to quickly determine which drugs to prescribe based on the actual responses of their patients' tumor cells.

TECHNOLOGY

The technology is based on a new measurement tool, the **Suspended Microchannel Resonator (SMR), invented at MIT.** This tool measures the weight change of cancer cells in response to cancer drugs. It effectively incorporates all genetic biomarkers, both known and unknown, and incorporates the myriad of other factors (epigenetic, metagenetic, environmental, and many others), both known and unknown, that affect a cancer cell's response to a cancer drug. The SMR test is so uniquely sensitive that it can weigh single cells with precision to 1 part in 10,000 (~50 femtograms), which is 10-100x better than any other single-cell-measurement tool.

SIGNIFICANCE

Travera can pinpoint the right drugs within <2 days, even though it will take many weeks to work in the patient's body. Because it works across many cancers and many cancer drugs, it is moving oncology from being <20% personalized to >80% personalized, guiding patients to cost-effective treatments that will help them in the now, and saving payers from paying for ineffective drugs.

CLINICAL NEED

The inability to understand which drugs will work on which patients is one of the greatest challenges in treating cancer. Side effects of treatment as clinician guess which approaches may work using trial and error has a devastating impact on patients.

DATA/EVIDENCE

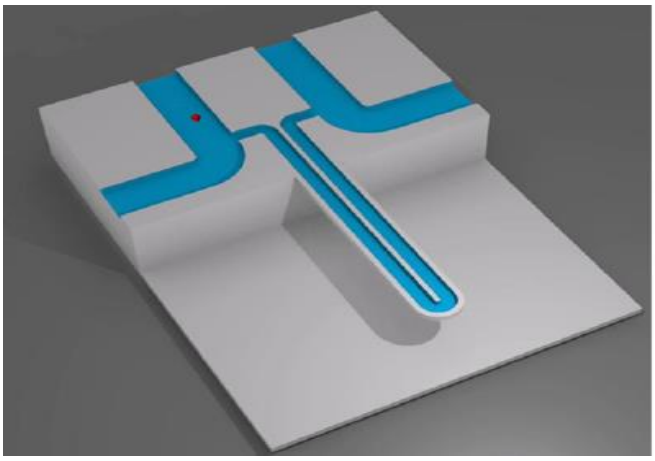
MIT and Dana-Farber Cancer Institute recently published results of a small study of multiple myeloma patients which showed the SMR correctly predicted the response of nine multiple myeloma patients to combinations of three cancer therapies. Travera is expanding this study of multiple myeloma patients and validating the technology for breast cancer and lung cancer.

MARKETPLACE/COMPETITION

Cancer Diagnostics marketplace is dominated by genomic testing, which only works for about 10% of cancer patients. Similarly, the new cancer Immunotherapies are limited to about 10% of cancer patients.

BUSINESS MODEL

The firm will sell boxes and testing kits. Approximately $10,000 and testing kits which are approximately $2,000.



Travera will offer capital equipment and test kits to hospital and clinics catering to cancer patients to tests drugs, to maximize drug quality and effectiveness for patients and to save them from unnecessary toxicity.

MILESTONES

Q4 2019 Launch of CLIA lab
Q2 2020. 100-person multiple myeloma clinical study complete
Q2 2020. Proof of concept studies in breast and lung cancer complete
2022. Cash flow breakeven status achieved

FINANCE/FUNDING

$7.7 invested. $17.1 million post money valuation. $450,000 in grants received from NCI and NSF. Investors include Horizon Ventures, Affinity Biosensors, Leukemia Lymphoma Society, and Angel Investors

OWNERSHIP

The firm is majority owned by its equity investors.

INTELLECTUAL PROPERTY

The company exclusively licensed the SMR patent portfolio from MIT for the fields of cancer and immunology.

HISTORY/ORIGINS

Travera was founded in 2017 by Dr. Clifford Reid, an MIT alumnus and successful entrepreneur, and Professor Scott Manalis, who invented the SMR measurement tool in the Manalis Laboratory in the Koch Institute for Integrative Cancer Research at MIT.

ORGANIZATION

Dr. Clifford Reid, CEO, Dr. Scott Manalis, Principal Consultant, Dr. David Marqulies, Board Member are joined by three MIT Scientists who direct research, engineering and development.

STATUS

Current series B financing of $15 to $20 million will fund the commercial launch of breast cancer and lung cancer Laboratory Developed Tests (LDTs) and fund the development of the next generation of Travera's SMR instruments and kits, which will be sold as In Vitro Diagnostics (IVDs) to clinical laboratories and cancer hospitals around the world.

website. www.travera.com

Travera Founders and Management Team

Clifford A. Reid, Ph.D.
Chief Executive Officer

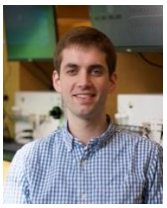
Clifford Reid is the founding CEO of Travera. Previously, Dr. Reid was the **founding Chairman, President and Chief Executive Officer of Complete Genomics** (NASDAQ:GNOM), a leading developer of whole human genome DNA sequencing technologies and services. Prior to Complete Genomics he founded two enterprise software companies: Eloquent (NASDAQ:ELOQ), an internet video company, and Verity (NASDAQ:VRTY), an enterprise search engine company. Dr. Reid is on the Visiting Committee of the Biological Engineering Department at the Massachusetts Institute of Technology (MIT), a member of the MIT Corporation Development Committee, and an advisor to Warburg Pincus. He earned a S.B. in Physics from MIT, an MBA from the Harvard Business School, and a Ph.D. in Management Science and Engineering from Stanford University.

David Margulies, MD
Board Member

David Margulies is a physician executive and entrepreneur. **David has founded or co-founded six successful technology-based health system and health services companies**. He created the first clinical computing programs at both Columbia Presbyterian Medical Center and Boston Children's Hospital, serving as BCH's first Chief Information Officer. He was Executive Vice President, Chief Scientist, and a Director of Cerner Corporation. He co-founded CareInsite, now WebMD, serving in Director and senior executive roles. He co-founded and was CEO and Chairman of Correlagen Diagnostics, and he co-founded of Generation Health. He is on the board of Directors at the Commonwealth Health Alliance. David is a graduate of Amherst College and Harvard Medical School, and board certified in Internal Medicine. He holds an appointment as Assistant Professor at Harvard Medical School and is a member of the faculties of Genetics, Developmental Medicine, and Informatics.

Scott Manalis, Ph.D.
Principal Consultant

Scott Manalis is a **professor of biological and mechanical engineering at MIT and has been a faculty member at MIT since 1999.** His research group applies microfabrication technologies towards the development of novel methods for probing biological systems. Current projects focus on using electrical and mechanical detection schemes for analyzing DNA, proteins and single cells. Dr. Manalis was the recipient of the Presidential Early Career Award for Scientists and Engineers (PECASE) from the Department of Defense. He was previously selected by Technology Review magazine as one of the 100 innovators under the age of 35 whose work and ideas "will have a deep impact on how we live, work and think in the century to come." He received the B.S. degree in physics from the University of California, Santa Barbara, and the PhD degree in applied physics from Stanford University.



Rob Kimmerling, Ph.D.
Director of Research & Development

Rob Kimmerling is the Director of Research of Development and a co-founder of Travera. He **received his B.E. in Biomedical Engineering from Stony Brook University, where he first started working on microfluidic device development for single-cell analysis applications.** Rob continued in this field at MIT where he earned his Ph.D. in Biological Engineering. His graduate work focused on developing novel microfluidic platforms for collecting linked measurements of single-cell biophysical and transcriptional properties. After graduating, he continued developing these projects as a Research Scientist at the Koch Institute for Integrative Cancer Research at MIT, where he led a team utilizing these approaches to characterize transcriptional signatures associated with single-cell drug susceptibility in various malignancies.

Selim Olcum, Ph.D.
Director of Engineering

Selim Olcum is the Director of Engineering and a co-founder of Travera. Prior to this, he was a research scientist at the Koch Institute for Integrative Cancer Research at MIT. **During his tenure at MIT, he invented several techniques enabling rapid assessment of single-cell growth**. Dr. Olcum received his post-doctoral training at the Department of Biological Engineering at MIT. During this time, he developed high-precision, real-time measurement methods for attogram-level analysis of cell-derived vesicles and nanoparticles in suspension. He received his B.S., M.S. and Ph.D. degrees all in Electrical Engineering from Bilkent University, Turkey. His dissertation work focused on MEMS-based ultrasound transducers for biomedical applications. He has co-authored over 40 journal papers and conference proceedings, and is the inventor of several patents.

Mark Stevens, Ph.D.
Director of Clinical Development

Mark Stevens is the Director of Clinical Development and a co-founder of Travera. He **joined Travera from Dana Farber Cancer Institute, where as a research scientist he led a team working on the development of the MAR biomarker platform** across malignancies. Previously, Mark established more than a decade of successful, biology-focused interdisciplinary pursuits. He received his B.S. in Biochemistry from the University of Washington, where his research focused on the biophysical properties of cell membranes. After a brief stint at the imaging cytometer start-up Amnis, he started his Ph.D. in Biology at MIT. His thesis work at MIT's Koch Institute for Integrative Cancer Research focused on translational and biological applications of single-cell biophysical measurements, spanning single-cell cancer metabolism to cancer biomarker development.

Management Interview

Travera is using a breakthrough technology invented at MIT to measure which cancer drugs work against an individual's unique cancer. This revolutionary diagnostic test will enable oncologists to quickly determine which drugs to prescribe based on the actual responses of their patients' tumor cells.

Clifford Reid is the founding CEO of Travera. Previously, Dr. Reid was the founding Chairman, President and Chief Executive Officer of Complete Genomics (NASDAQ:GNOM), a leading developer of whole human genome DNA sequencing technologies and services. Dr. Reid is on the Visiting Committee of the Biological Engineering Department at the Massachusetts Institute of Technology (MIT), a member of the MIT Corporation Development Committee, and an advisor to Warburg Pincus. He earned a S.B. in Physics from MIT, an MBA from the Harvard Business School, and a Ph.D. in Management Science and Engineering from Stanford University.

The following is a transcript of a recorded interview conducted June 2019 with Cliff Reid PhD, Founder and CEO of Travera. It has been reviewed by the company for accuracy.

OVERVIEW

So what does Travera do?

We are a new company recently spun out of MIT, with a revolutionary new technology for measuring the effectiveness of cancer drugs for cancer patients. We have a laboratory test that tells us which cancer drugs are most likely to work for each patient, before giving the patient the drugs and incurring the toxicity. This is a new solution to an old problem. Researchers have tried and failed for many decades to create a laboratory test that directly measures the effectiveness of cancer drugs against patients' cancer cells.

Our test is based on a new measurement tool invented at MIT, called the **Suspended Microchannel Resonator,** that makes exquisitely precise measurements of the effects of cancer drugs on cancer cells. For the first time we can make predictive measurements in a laboratory of which cancer drugs are going to work for with cancer patients.

TECHNOLOGY

And can you describe how the technology works, what makes it unique and special?

Sure, the thing that makes it so different is that we're not waiting for the cancer cells to die. All of the prior technologies that have tried to measure cancer drug effectiveness in a laboratory setting have done so based on the death of the cancer cells. But the problem is cancer cells naturally die quickly, and it's almost impossible to distinguish between natural cell death and drug-induced cell death.

We don't measure the end of the cancer cell's life. We measure the beginning of its process toward death. MIT Professor Scott Manalis invented a new measurement tool that is an exquisitely sensitive scale. It can measure an incredibly tiny weight change of a cancer cell. In partnership with oncologists at Dana Farber, they figured out that when you apply an effective cancer drug to a cancer cell, it shrinks by a tiny amount -- an amount previously too small to measure. But using Scott's new scale, we can measure the response of the cancer cell to a cancer drug by measuring its changing weight. And we can do this in just hours after taking the cancer cells out of the patient. So we've effectively tricked the cancer cell into thinking it's still inside the patient by making such a quick measurement, and the cells behave in our laboratory tests just like they behave in the patient.

"... for the first time can provide and add predictive measurements in a laboratory test of which cancer drugs are going to work for with cancer patients."

"We don't measure the end of the cancer cells life. We measure the beginning of its process toward death."

"It is about a 36 hour test from cell collection to final report."

We've demonstrated that we can run this test using cells that are shipped overnight using FedEx or UPS. The cells are collected by an oncologist or pathologist, they ship those cells to us overnight, and we test those cells the next day. We send the report back to the oncologist at the end of the second day. So it is about a 36 hour test from cell collection to final report.

"There are two major approaches to drug effectiveness testing. The first one is to do direct drug testing. The second is to do indirect drug matching."

CURRENT APPROACHES

And what are the current approaches to testing? How long does it typically take?

The popular current approach for testing cancer cells to select therapies is based on genomics, or DNA sequencing. There are two challenges with that approach. The first is timing, as genomic tests typically takes a week or two to run. But the more important challenge of genomic testing compared to what we're doing is that it is not very predictive. It works for only about 10% of patients, and it only selects drugs that are effective about a third of the time.

"What we're doing is switching cancer from the drug matching model to the drug testing model."

There are two major approaches to drug effectiveness testing. The first is drug testing and the second is drug matching.

"...we're going to run your cancer cells by dozens of different cancer drugs, and we're going to pick exactly the drug that works for your unique cancer. And we're going to do that within 36 hours."

An excellent example of drug testing is the world of antibiotics. When you get an infection, you go on to your doctor, they take your blood sample, they grow up your bacteria in a dish, they hit the bacteria with a bunch of antibiotics, and they give you the drug that's the most effective for your infection. That is really a good method, and it works for about 98% of all patients with infections.

But for cancer, oncologists don't actually test your cancer cells against any drugs. What your oncologist does is to look up the results of previous clinical trials. Based on your age, your type of cancer, your stage of cancer, and some other measurements, they find a group of patients that have characteristics most similar to you, and who have taken cancer drugs that worked for some of those patients. And that's the information the oncologist uses to select the drug for you. Compared to the drug testing model in infectious disease, which works for about 98% of patients, the drug matching model in cancer works for about a third of patients. What we're doing is switching cancer from the drug matching model to the drug testing model.

So rather than matching you to other patients who are somewhat like you, and giving you drugs that worked for some of those patients, we're going to take your live cancer cells, run them by dozens of different cancer drugs, and pick exactly the right drugs that work against your unique cancer. And we're going to do that within 36 hours. It is a major change to the way cancer drugs are selected for cancer patients.

Can you put any sort of numbers on the approximate, before and after, what payer will spend in in this diagnostic space now versus what they might spend in the future?

As you probably know, new cancer drugs are very expensive. They typically cost hundreds of thousands of dollars per year to administer a cancer patient. We will be able to prevent patients from getting completely ineffective $200,000 a year drugs by using a diagnostic test that costs a few thousands of dollars. At scale we will get our prices down to current typical pricing of genomic tests, which are around $3,000. Saving a $200,000 drug regiment with a $3,000 test is the kind of thing that we're going to be able to do. This not only saves the patient from the toxicity of ineffective drugs, but also saves the payer from paying for drugs that are shown to be ineffective for that patient.

SIGNIFICANCE

What do you think this is the significance of this and what impact will this have on the treatment of cancer?

I think the impact will be enormous. The first impact will be on oncologists and patients. They will no longer have to go through the process of guessing which drugs are going to work, only to have them work a third of the time. For some cancers there are dozens of FDA-approved drugs, but they are too toxic for a patient to try all of them. A patient might die having never tried the best drug for them. We eliminate the toxicity problem as we can test dozens and dozens of toxic drugs in the laboratory without inducing any toxicity in the patient.

The second group that's going to benefit is the payers. It is well known in the cancer community that less than half of all cancer drugs administered to cancer patients have any therapeutic value whatsoever.

Payers know that they are usually paying for drugs that don't work for that patient. So for the payers, we have a test that will inform them, prior to administering the drug to the patient, which drugs are likely to work and not work. And this will enable the insurance companies to use their limited cancer resources to do a much better job of paying for the right drug for the right patient at the right time.

"20 years ago, we had great hopes, that by sequencing cancer genomes and mastering mutations in genomes to drugs

we would simply solve the problem of matching cancer drugs to cancer patients.

It turns out, it didn't work very well... cancers are so much more complex than just their genomes."

"We ran the testing in our lab to predict which drug combinations would work or not work for these patients. And then we compared that to the actual clinical outcomes of those nine patients. And we got nine out of nine right."

DATA & EVIDENCE

From the data and the evidence point of view, what evidence do we have this actually works? Have you done in clinical studies?

Yes, we did a small clinical study at the Dana Farber Cancer Institute. We ran a study of nine patients who had multiple myeloma against combinations of three of the popular multiple myeloma drugs. We ran the tests in our lab to predict which drug combinations would work for which patients. And then we compared our results to the actual clinical outcomes of those nine patients. We got nine out of nine right.

It's a small test, but it's still a dramatic result. So now we are scaling that study up to a 100-patient multiple myeloma clinical study. We have six wonderful academic medical center partners, which include Dana Farber, our initial partner, and we've now added Mass General, Weill-Cornell, Mount Sinai, City of Hope, and most recently, Emory. With the six academic medical center sites will be collecting patient samples, running the study, and publishing the results of the study sometime in the first half of 2020.

So what is what is the feedback been from the physicians and clinicians have been involved in in this? What are they saying about this?

Well, the physicians that are close to us are thrilled because they have literally wanted this kind of technology to succeed for the past few decades. And it's been tried many, many times and failed. The physicians who are not so close to us are skeptical, because they've been told so many times that some new company or some new researcher has an effective *ex vivo* (meaning outside the patient, in the lab) drug sensitivity test. It has been an extremely hard technical problem to solve, and we think we have the first solution that is really going to work. The clinicians who have seen our initial results are very excited, and they are waiting for the results of our hundred patient study. That is the study that's going to provide us the clinical validation that we need to move this this test into widespread clinical practice.

CLINICAL NEED

And what do you see as the big clinical need? What is most important element of the clinical need and what is the greatest need today, for patients facing cancer?

Well, the entire world of precision medicine is trying to address this overwhelming critical need to get the right drug to the right patient at the right time. The drug development industry has developed a huge number of cancer drugs, and over 500 of these drugs have been approved by the FDA. But we don't know which of these drugs will be most effective for which patient at which moment in time. So the precision medicine initiatives that have been running for the last couple of decades, and on which companies and governments have spent many, many billions of dollars, are trying to address this problem.

"... this will enable the insurance companies to use their limited cancer resources to do a much better job of getting the right drug to the right patient at the right time."

The primary technology used in precision medicine is genomics. And 20 years ago, we had great hopes, that by sequencing cancer genomes and matching mutations in genomes to drugs that target those mutations, we would solve the problem of correctly matching cancer drugs to cancer patients. As it turns out, it didn't work very well.

"We ran the testing in our lab to predict which drug combinations would work or not work for these patients. And then we compared that to the actual clinical outcomes of those nine patients. And we got nine out of nine right."

Genomics is one part of the cancer equation. But cancers are so much more complex than just their genomes. The precision medicine community is now exploring other measurements and other technologies, beyond genomics, to find more effective approaches for matching the right cancer drug to the right cancer patient.

MARKETPLACE AND COMPETITION

You talked a little bit about the incumbents, competitors, and who you're going to be taking market share or business from, and the impact on the marketplace?

Well, there are no live-cell laboratory tests for cancer drug effectiveness of significance in the marketplace. So the size of the market for the kinds of testing we're doing is effectively zero. This is a new market, a whole new category of testing that's had no commercial success so far. What was the market for the smartphones when the iPhone was introduced in 2007?

What is the market size, who are the competitors?

The laboratory testing market for cancer is quite large, over twenty billion dollars in the US alone. There is a huge medical industry for testing cancer patients and doing the best we can do as a cancer community of getting them the right drugs. So when we offer a test that is more effective than the existing tests, we will see some portion of that $20 billion move from the existing tests to new tests that do a much better job of matching drugs to patients.

BUSINESS MODEL

In terms of the margins, and revenue and profit opportunity for the company, can you talk a little bit about the business model and return on investment earning potential?

This test relatively inexpensive test to run. We use benchtop boxes, typical biochemical reagents, and extremely small quantities of cancer drugs that we test. We ship patient samples using FedEx and UPS overnight. At scale, we will be quite happy selling tests that we run in our laboratory for the typical genomic testing price of $3,000.

But the long term business model of this company will be to sell in-vitro diagnostics, or IVDs. We will sell benchtop instruments and reagent kits to cancer hospitals so they can run our cancer tests on-site. And they can run these tests same-day in their clinical laboratories. This will be a classic IVD business, and IVD margins tend to be around 80%. But initially, we will offer our laboratory developed tests (LDTs) through our CLIA lab.

And how many potential hospitals and or labs are there that would be candidates to purchase?

There are 5000 hospitals in the United States that serve cancer patients and every one of them is a candidate. Our initial customers will likely be the major academic medical centers that do cancer care, of which there are about 70 major cancer centers in the US.

Interestingly, the US is not the largest market for our technology. The EU is bigger, and the biggest market will be China. We'll start with the US, next go to Europe, and finally we'll get to China.

"There are 5000 hospitals in the United States that serve cancer patients and appropriate for a $10,000 box and a $2,000 price on a kit. Every one of them as a candidate."

"There is an extensive portfolio of patents that protect the technology, and MIT owns those patents. And we have exclusively licensed those patents from MIT for the fields of cancer and Immunology."

INTELLECTUAL PROPERTY

What about your intellectual property? Could one of these larger companies with competing technology who could reverse engineer your idea and to the system?

No, we're very well protected from those kinds of issues. The core technology we're using is completely different from the technologies that have been used for other cancer drug effectiveness testing. The technology was invented at MIT. There is an extensive portfolio of patents that protect the technology, and MIT owns those patents. We have exclusively licensed those patents from MIT for the fields of cancer and Immunology.

As such we are confident that no one will be able to reverse engineer this technology and bring it into commercial practice, as our IP is fully blocking of that endeavor.

FUNDING AND OWNERSHIP

Who owns the company and how you've been funding this new venture?

We raised our Series A financing in 2018, starting with a $5.7 million raise and later expanding it to $7.7 million. The founders of the company include myself and Scott Manalis, the professor who invented the technology, the three MIT PhDs and postdocs who developed this technology over the last six years in Scott's lab at MIT, and our four advisors from MIT and Dana Farber who helped develop the core technology and its clinical applications. The founders are minority owners of the company, and our investors are the majority owners. Early next year we will raise our Series B to scale up our CLIA lab to expand into additional cancers and to begin developing our in vitro diagnostic system.

CURRENT STATUS

Where you are now and what milestones and key events coming down the path?

Sure, there are three key milestones that we will accomplish with our initial Series A financing.

The first is to complete our 100-patient myeloma clinical study, to clinically validate our approach to drug sensitivity testing in multiple myeloma. The second key milestone is to demonstrate that our technology works outside of multiple myeloma, particularly in solid tumors.

There's nothing multiple myeloma specific, or even blood cancer specific, about our technology. We believe that will be just as effective for solid tumors. We are currently running two projects in solid tumors, one in lung cancer and one in the breast cancer, to demonstrate at the proof of concept level that our technology works in solid tumors. And then, with the Series B financing and beyond, we will do similar large-scale patient validation studies in different cancers.

The third thing we're doing with our Series A funding is setting up our CLIA lab, because we expect that as we come to the end of our multiple myeloma clinical study, we are going to start getting requests from oncologists to test their patients. The proper way to do that in the United States is to operate a CLIA lab under the FDA guidelines.

In terms of the test in lung and breast cancers, will those be similar to the multiple myeloma nine patient study to validate those applications?

Yes, the first proof of concept studies will be just like our first multiple myeloma clinical study. These studies will allow us to understand the differences between blood cancers and solid tumors. The key difference, of course, is how you get the live cancer cells. Multiple myeloma cells are acquired through bone marrow biopsies, whereas breast and lung cancers require needle biopsies of the tumors. While cell handling is quite different between blood cancers and solid tumors, the core measurements that we're making, in terms of measuring the weight response of cancer cells to cancer drugs, is the same across all cancers.

"We are currently running two projects right now in solid tumors, one in the lung cancer space, one in the breast cancer space, to demonstrate kind of a proof of concept level, that the technology is going to work as well and solid tumors..."

"I thought this was the most extraordinary approach to figuring out which cancer drugs to give to which cancer patients."

"It is an approach that an end run around all of the extraordinary complex biotech history of cancer.

And I felt this could be the extraordinary "breakthrough that we needed to really do a better job of providing cancer care to patients."

HISTORY AND BACKGROUND

Could you tell us a bit about your background and how you got involved in this?

Prior to founding Travera, I was the CEO of Complete Genomics, a DNA sequencing company. I founded CGI in 2006 and was the CEO for 10 years. I took CGI public and eventually sold it to a company based in China. At Complete Genomics we did the first high quality whole human genome sequencing of normal genomes and of cancers.

As such I was acutely aware of the enormous impact that genomics was likely to have on cancer, and I believed when I founded Complete Genomics that we would crack the code on cancer by doing high-quality cancer genome sequencing. But much to my disappointment, and to the disappointment of the entire cancer community, genomic information alone has not been able to match the right cancer drug to the right cancer patient. I sit on the Visiting Committee of the Department of Biological Engineering at MIT, and so I get exposed to all of the wonderful research going on at MIT, in biological engineering in general, and cancer in specific. When I met Scott Manalis and understood his technology, I thought this was the most extraordinary approach to figuring out which

cancer drugs to give to which cancer patients. It is an approach that enables us to end-run the extraordinary complexity of cancer biology that has defeated the genomics approaches.

Because rather than having to understand all the genome and the proteome and the epigenome and the metagenome and all of the other enormously complex biochemical processes that enable cancers to survive in humans, we could simply skip over all of that complexity, and go right to a direct measurement of whether a drug was working or not working for a cancer patient, without having to understand the complex mechanism of the drug. I felt this could be the extraordinary breakthrough that we needed in order to do a much better job of providing cancer care to patients.

"Travera offers the possibility of taking old cancer drugs, that are sitting on the shelf, many off patent and inexpensive and for the first time being able to effectively use those drugs for cancer patients."

IN SUMMARY

What final thoughts or comments would you give, prospective investors?

The cancer community has an enormous unmet need for clinically effective methods of matching the right drug to the right patient at the right time. The traditional drug matching approach of matching each cancer patient to a population of patients with some similar characteristics (in a clinical trial) in order to select drugs that worked for some of those patients, has proven to be not very effective, working about a third of the time.

By comparison, the drug testing approach, which is used so effectively in infectious disease, works for about 98% of infectious disease patients. The cancer community has recognized this disparity and has tried for decades to create an effective drug test for selecting the right drug for the right patient. But researchers have never had sufficiently powerful tools and technologies that are needed to create an effective cancer drug test.

Over the past two decades, inspired by the revolution in DNA sequencing technologies, the cancer community has focused on genomics-based precision medicine. But genomics-based precision medicine matches each cancer patient with a certain mutation to a population of patients with similar mutations (in a clinical trial) in order to select drugs that worked for some of those patients. This is simply another form of drug matching, and despite the billions of dollars spent on genomics-based precision medicine, fewer than 10% of all cancer patients benefit.

Travera has developed a completely different and new approach to solving this critical problem by using a fundamentally new measurement tool to create a fundamentally new test, which has the potential of being the test that moves the cancer community from ineffective drug matching to highly effective drug testing. If we are successful across a broad range of cancers and cancer drugs, Travera will transform cancer care. We will meet an enormous unmet need, we will improve cancer patient outcomes, and we will grow Travera into an important company in the field of cancer care.