CRESCENT COVE

Crescent Cove Conversations

featuring

Dr. Taylor Sittler

Co-Founder of Color Genomics

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What is it and why was it created?

Fundamentally, people do business with people. Our founder series is a place where we can show the person behind the business. It will tell the story of how and why the business was started. Our series will be personal and pointed. Our founders are impressive people. Sometimes, they are following a calling to right a wrong, fill a gap, be of greater service, but in all cases, they have a great story to tell.

We look forward to you listening to their stories and learning more about these entrepreneurs.

Crescent Cove Conversations:

Dr. Taylor Sittler, Co-Founder of Color Genomics

In this series, Crescent Cove invites the insights and life lessons from the founders and leaders we've worked with over the years. Acknowledging there is no 'secret sauce' to success, these vignettes explore the human dimension of high-performing individuals and the companies they lead.

Dr. Taylor Sittler is the former Head of Research at Levels, a continuous glucose monitoring company. A physician and entrepreneur, Dr. Sittler's career has focused on personalizing medicine, starting companies in genetics and women's health, including co-founding Color Genomics, where he was the chief science officer. Prior to that, he completed his residency in clinical pathology at UCSF and started a genetics research group in the computer science department at UC Berkeley. He received a Howard Hughes medical training grant and scholarship during medical school at the University of Massachusetts and UCSD. He has published papers on pathogen detection and characterization, genetic sequence analysis and algorithms, and several other topics related to systems biology. He is an avid skier and hiker and enjoys all things outdoors.

Dr. Sittler spoke with Crescent Cove about being raised on a farm, what's causing the obesity epidemic, and what's needed to "wander well" in a career.

Crescent Cove (CC): Can you tell us about your childhood? Where was home, and what was family life like?

Dr. Taylor Sittler (TS): I grew up in a little town called Marion, Massachusetts on the water near New Bedford, the old whaling capital made famous by the novel Moby Dick. It was a tiny town of about 3,500 people. My parents bought a small, two-acre farm in the 1970s. A part of it had been there since the 19th century, and it needed quite a bit of work. I remember looking out the back door at a 20-foot drop where the deck was supposed to be. And I remember my parents building that deck by hand.

CC: What sort of work did your parents do?

TS: My mom was an architect and my dad a software developer at the Bank of Boston. Dad commuted back and forth and could be gone three or four days at a time. My mom had to juggle her architecture business while raising the three of us. I was always so impressed with her ability to keep all the balls in the air.

My dad was born in Germany, the oldest of eight. We always had a lot of his family coming through and we used to do family reunions every few years. It was definitely exciting times when we were all together. My family is a loving group, but they are also very opinionated! Conversations could get heated, but I appreciated that we could talk openly and accommodate multiple perspectives.

We also hosted exchange students and friends from Japan, Germany, France, and several other countries. It was this little farmhouse in Massachusetts, but I felt lucky to have parents who made it international.

CC: That sounds idyllic. How did you go from a small farm then to medicine? And why did you decide to jump from medicine to founding a startup?

TS: I have been a software developer since I was a kid, doing odd programming jobs since high school. I wanted to do something meaningful and began thinking about medicine in high school. I knew McGill in Montreal had an excellent medical school, so I went and studied biochemistry.

Unfortunately, I was turned off by my classmates' pre-med egos and didn't want them as colleagues, so I decided not to pursue medicine. Instead, I got back into software development.

I moved back to Boston, spent a few years building an IT department, and then worked as a consultant. I got the software bug from my dad, and I liked it enough but started to feel the work wasn't as meaningful as I knew it could be.

I remember thinking, "Wouldn't it be cool if I could apply software automation to the field of medicine?" This became the next 20 years for me – figuring out how to weave software and medicine together.

CC: And that's when you returned to medicine?

TS: Yes. Not long after that realization, I took the MCATs and went to med school at UMass. I would drive to MIT one day a week to work in systems biology at the Whitehead Institute. I believed that we could use software and systems thinking to better understand the biological mechanisms related to health and disease.

I was working with Dr. Trey Ideker to construct and evaluate networks of protein interactions. After my second year of med school, he received an offer to be a professor at UCSD, and I received a Howard Hughes Fellowship to work with him. I drove across the country, got a place in Ocean Beach in San Diego, and helped him start his lab at UCSD. A full genome sequence for the bug that causes malaria had just been published. We combined that with networks we constructed using what we knew from existing biology to figure out how to treat the disease better. We published a paper in Nature in 2005 identifying potential drug and vaccine targets for malaria.

So it was a bit of wandering between tech and medicine, but that's been my defining path.

CC: Tell us a little more about that "wandering path." Where did you go next?

TS: After finishing med school, I joined a startup in 2008 in New York City. The stock market crashed and the CEO who was funding the company lost most of his capital. By early 2009, I was out of a job and trying to figure out what to do. I moved to San Francisco, interned at a small hospital, and started working in genetic sequence analysis at UCSF. For someone interested in computers and medicine, it was a nice mix.

Genetic sequence analysis is a discrete math problem. You have the sequence, ACGT, four letters that occur in different orders and that form unique patterns. Working with Charles Chiu at UCSF, we wanted to identify novel viruses by determining their genetic sequence. This was a decade before Covid, and we were looking at how you might detect a new outbreak of something like H1N1. The sequencing technology to make this possible was improving dramatically and we developed a solution that paired RNA sequencing technology with pattern matching.

This was an example of how the systems biology I had done five years earlier set me up to solve a new problem, though I couldn't have known that at the time. This process eventually became the basis for how the Centers for Disease Control detects outbreaks.

The next problem I faced was a scaling issue: the sequencing technology was improving so quickly that we were getting orders of magnitude more data back from each experiment. That led me to look around for computer scientists who could help us scale the solution we developed. I started collaborating with a grad student from Berkeley, Matei Zaharia, who was working on a promising new project (which became Apache Spark) to speed up data analysis. Before I knew it, I was on the phone talking about applications in genetics and medicine with a group of computer science professors from Berkeley.

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Dave Patterson, who won the Turing Award in 2017 – which, if you're not familiar, is like the Nobel Prize for computing – became interested in the potential for computer science to impact cancer treatment. We ended up forming a group within his computer science lab (with eight professors and 50 grad students) to make progress on rapid sequence analysis. This initially helped improve the speed of our previous application of outbreak detection.

We then applied the same algorithmic improvements to speed up whole genome sequence analysis and started using it to identify genetic mutations in cancer.

CC: That must have been a fascinating synthesis of your prior interests and experiences. But tell us, amid all that wandering, is something that you would consider a most valuable mistake?

TS: Oh, I've made lots of mistakes. That's the value (and the pain) of wandering – you uncover things you wouldn't otherwise see. Honestly, my most valuable mistake was probably starting Color Genomics.

As my residency wrapped up, I was working at Berkeley, and they had offered me a junior faculty position. During the spring of that year, I got a cold email from an entrepreneur named Elad Gil , who was thinking about starting a genetics company. We had an engaging conversation at Blue Bottle right down the street from Twitter in San Francisco, where he was then head of strategy. He and my other cofounder, Othman Laraki, had been at Google before that. We got to know each other over the next few months and enjoyed working together.

Still, it was a tough call. Do I stay on as a member of the faculty at this prestigious institution, or do I jump into the startup world?

I had been interested in starting companies for a long time, so I went for it. It was seen as a mistake to my academic advisors in that it took me off the track that would have established me in that world. And I'm so glad I did it.

My four years at Color ended up being incredibly valuable. It gave me the chance to found a company and participate in building a meaningful business with incredibly talented and dedicated people. It has led me down a very different path into the startup world, and that's a place where I have been pretty happy.

The company now goes by Color Health, and it's valued at around $4.6 billion. They do 50-70% of Covid testing in San Francisco and are a large testing center for California. We started with a different mission: to make genetic testing part of primary care and to enable personalized medicine. Because of the high quality, low-cost genetic testing lab we had built, we were perfectly positioned to begin Covid testing when that was needed. We could not have anticipated that turn of events when we started the company.

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CC: Let's focus in on a health topic that's very near to your role as Head of Research at Levels: what's causing skyrocketing levels of obesity?

TS: I could do a whole podcast on this. The biggest single cause for the rise in obesity and chronic disease is changes in our food system – the industrialization of what we eat. Some of that is driven by government incentives, such as subsidizing corn or wheat production. Some of it is driven by a lack of understanding and attention to nutrition in the medical community. And it is compounded by our increasingly sedentary lifestyle, stress, and lack of sleep.

If I had to point a finger, the two biggest reasons for the epidemic are drinkable sugars (such as in soda, juices, and smoothies) and refined carbohydrates (such as breads, pastas, and pizzas) – these are the fastest ways to ingest sugars.

Michael Pollan did a great job describing this in The Omnivore's Dilemma in 2006, when this was first recognized as an epidemic. Because we've industrialized food production, fractionated corn and wheat into many separate components, and made calories so readily available, almost everyone is overeating.

High-fructose corn syrup, for example, raises uric acid levels, associated with long-term increases in blood pressure and insulin resistance. Refined carbohydrates deliver boluses of glucose that can overwhelm your system over time and lead to diabetes, cardiovascular disease, Alzheimer's, and many of the most common diseases we get as we age.

We are a species that has adapted to go long periods without eating. A few adaptations human beings inherited over the eons enable us to thrive without eating for extended periods. We now find ourselves in a situation where we're eating all the time, and these adaptations are making overeating particularly bad for us.

There is, of course, a lot of controversy about what constitutes a healthy diet and what "healthy behaviors" are. What's exciting about Levels is we can now measure how our bodies respond to the food we are consuming. We can help someone see what's affecting their glucose and what's not and help people immediately see how their behavior connects to their health.

And there are all sorts of new devices coming online. One we particularly want to see is continuous insulin monitoring because it's at the core of this metabolic health crisis. Insulin resistance is a phenomenon that is associated with disease, and measuring it directly would be a game-changer.

The good news is that you can change your insulin resistance by sleeping, eating, and exercising better. Even a single 30-minute high-intensity workout can change your insulin resistance. Over time, small changes like that can have a significant impact. We're learning that we have a lot of control over our health by adopting good habits. Knowing what to change and being consistent about it is key.

So the first thing Levels has done is shine a light on this epidemic and help people understand metabolic health. Secondly, it provides personalized feedback. We all have different genetics and understanding how you uniquely respond to your environment

by wearing a continuous glucose monitoring device is incredibly empowering for your health.

CC: You mentioned there's a lot of debate surrounding this topic. Do you have a take on red meat?

TS: I have no real view on red meat. There is good evidence that large quantities of meat, particularly processed and cooked meat, are linked to heart disease, cancer, diabetes, and premature death, so limiting your intake is a good idea. I think Michael Pollan's balanced, succinct view works here: "Eat food, not too much, mostly plants."

Moderation and generous vegetable intake should help most people stay out of trouble. Most people's biggest single issue is calorie overload and insulin resistance related to excess carbohydrates.

If I had to pick the two most important behaviors to focus on, I'd say regular exercise and fasting (going sixteen hours without eating on a regular basis). We are physiologically designed to make fasting really advantageous. The body uses these periods of metabolic rest to reset insulin sensitivity and flush out senescent cells, among other things. We've evolved that way. Exercise helps the body thrive by maintaining muscle and bone mass, hormone levels, and the immune system, to name just a few.

CC: So we've heard about your wandering, and how that's been to your benefit. What sort of career advice would you give for entrepreneurs today?

TS: There is increasing recognition that wandering and meaningful inefficiencies are critical to success. Jeff Bezos wrote in his 2018 shareholder newsletter, "Wandering is an essential counterbalance to efficiency. You need to employ both. The outsized discoveries—the 'nonlinear' ones—are highly likely to require wandering." It's also telling that Walter Isaacson called the book he wrote about Bezos Invent and Wander. And I just finished reading Range, which makes a similar argument about successful people trying a range of activities.

But wandering is also an easy way to get lost, and most people do get lost. While there is no prescription for wandering well, there are a few things I have found to be helpful.

First, you've got to develop a compass. Talk with a broad range of smart people and get feedback from those who agree with you and those who don't, even if it means forcing you to change direction. This part is hard on the ego but critical if you are going to succeed.

Second, build open, collaborative, passionate teams. Vision and passion are necessary to galvanize the people you will need to work with to succeed. Make sure yours are clear and easy to understand. Being generous and helping others where you can is also critical to building high-quality teams. You will need your co-workers and advisors to treat you the same way. The quality of the people you attract is the biggest element of control you have over your success.

Third, wandering takes a lot of grit. It requires constant striving to be as efficient as you can while tolerating the inefficiencies that look like greater success. It can feel exhausting and seem like you're being carried backward. You need to celebrate the wins and expect delays because the process is not straightforward. Making inefficiency a part of your process can pay dividends when things don't work.

CC: Can you tell us how you got introduced to Crescent Cove?

TS: I got connected through a financial advisor friend. The backstory is that while Color had been maturing and doing well

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as a company, it was still in the private markets. I was looking for some early liquidity to do other things. Jun was willing to work with me in ways other lenders wouldn't. He helped me navigate that challenge, and it has been very helpful.

CC: Last question, and it's one we ask everyone who joins us for these conversations: what is happiness?

TS: I've experienced happiness in two basic ways. First, there's this sense that you've achieved a flow state where you're doing something you love. A software project, for example, where I'm involved with a really thorny issue and trying to work out. As I am working through the solution, I get into a state where things flow, and there's a joy in that. I also experience this kind of joy when skiing, especially when I'm on a steep slope going fast – fast enough to hurt myself. Southern Alaska also has some amazing mountains. You can start on the water where the temperature's around 50 degrees and sunny. You climb up 2,000 feet, and it becomes a winter wonderland with vistas of snowy mountains in every direction.

And that leads me to the other kind of happiness – when you can stand back and look out at the sunset and be grateful for the things you have in your life, like your family, your friends, or some mountain you've just climbed. I am certainly grateful for the people I've been able to work with, the projects I've been a part of, and the perspectives I've seen. ■

Dr. Taylor Sittler

Co-Founder of Color Genomics

Taylor grew up in Marion, Massachusetts, playing soccer and the violin during his formative years.

He graduated Biochemistry BSc at McGill University (Montreal), attended UMass Medical School and worked at MIT and then UCSD under a Howard Hughes Medical Training Fellowship. After earning his MD, he completed residency at UCSF in clinical pathology and worked with world-class researchers at UCSF, MIT, and UC Berkeley (e.g. Matei Zaharia, Charles Chiu, Laura van't Veer, and Dave Patterson who won the Turing Award in 2017).

He co-founded Color Genomics in 2013 to close the gap in equitable access to healthcare and personalized medicine. Color started as a genetic testing company to enable personalized medicine, has expanded to offer COVID testing and now engages in virtual care more broadly.

He co-founded The Cusp, a virtual care start-up to enable women to better navigate menopause. Most recently, he was the Head of Research for Levels Health which uses continuous glucose monitoring to enable people to better understand how food and other habits impact their health day-to-day.

CRESCENT COVE

Crescent Cove is a technology-focused investment firm that is dedicated to supporting entrepreneurs and founders. Established in 2016, Crescent Cove leverages its global network of relationships and unique insight across markets, emerging industries, and technologies to build businesses and accelerate value creation across its portfolios.

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