

Our Stories: SynthBiome



Marvin Whiteley, PhD
SynthBiome



Paco Cifuentes, PhD
General Inception

After decades working in microbiology and advising biopharmaceutical companies on how to better screen pipeline therapeutics for human use, Marvin realized a big problem existed with inadequate mouse and test tube models. “Simply put, mice are not humans and test tubes are not humans,” Marvin states. “What is needed is a “bacterial gatorade” to mimic the human microbiome in test tubes.” After spending a decade getting microbe data in humans, Marvin used this benchmark data to develop a microbe test tube model for use in biopharmaceutical R&D.

MARVIN WHITELEY, PHD

How did you connect with GI?

During a meeting at the Georgia Technology Research Institute, our group was discussing the fact that a lot of experiments using mouse models are not relevant to humans. I mentioned a project I was working on to address these problems. After the meeting I received a call from Tim Richardson who in turn introduced me to Paul and Vikram from GI. We met in person in Dec 2020 when I was in California. Vikram in turn introduced me to Paco who became the fractional COO of our company.

PACO CIFUENTES, PHD

How did GI identify the opportunity?

After Marvin was introduced to Paul and Vikram, our team discussed the opportunity. I fell in love with the idea after my first conversation with Marvin. He made the world of bacteria an adventure. He told the story of his technology and I could see the potential applications. I understood that what he had was a transformational discovery in how to treat infectious disease. He had an incredible sense of purpose and impact for his solution.

He was worried about the fact he had published already, but we didn't see that as limiting. We understood we could build the company with trade secrets and could build the IP portfolio around the application of the technology.

MARVIN WHITELEY, PHD

What were the compelling reasons to partner with GI?

I've been approached many times over the years by folks wanting me to start a company. It seems way too daunting. The VCs don't understand my technology and I don't really trust the process because I don't have the time or lawyer on retainer to help me figure out the right deal. It's always made me reluctant. I'm in it to help people. I want to change the game in how to make successful therapies that work. But importantly, I love my job and don't want to leave my lab.

I know my technology could make a difference, because I've consulted with big pharma. They don't have the specific microbiology and microbe experience to do what I do. When I spoke with Paul and Vikram, they gave me confidence that the technology was valuable. They helped me put my ideas into a framework so I could see a strategic direction and value, something I didn't know how to do as an academic. And I like the GI team too. They are regular, straight forward people who know what they are doing.

PACO CIFUENTES, PHD

What was the investment thesis - why co-found?

There are huge gaps in how chronic and acute infections are treated. Humans tend to lose the war against bugs in part because antibiotics have been overused. Bacteria are complex, intelligent, and

social and they talk to each other which makes the environment in which they grow really important.

Most current model systems don't work because they don't let the bacteria behave naturally. They trick us because they don't show the real physiology. It means a lot of research is doomed to fail.

Marvin discovered a smart solution to outsmart the bacteria. He is able to mimic environments where bacteria grow by modifying a synthetic model efficiently. He is able to translate biological insights into a synthetic model.

His technology fills a big hole in the market. Current model systems don't work and prevent companies from developing drugs. He invented an elegant solution.

And Marvin is awesome. He is incredible to work with and brings amazing ideas to the table. He is known as the most innovative person in microbiology in the US. His ideas are revolutionary and his motivation is mission driven, to make a difference and make an impact on society. **MARVIN WHITELEY, PHD**

At what point in the SB journey/life cycle did GI join?

I was just at the ideation stage when we co-founded the company together. I didn't have IP as I had published everything as an academic. My idea was simple but challenging to execute. That didn't scare the GI team, they saw the value anyway. I didn't know how it could work, I needed them to come in and put the company together in a way that made sense.

PACO CIFUENTES, PHD

What point in SB journey did GI join?

The idea was fully baked. Marvin had done the heavy lifting working on transcriptional profiles of bacteria biology and getting insights into modifications of synthetic media for bacteria to behave as they would in their natural environments. He had proven the model. He had already shown work for cystic fibrosis, chronic wounds, and oral cavity. His data was remarkable but not industrialized.

There was no company formed around his work. That's where we came in.

MARVIN WHITELEY, PHD

How has the partnership experience been for you? How much does GI contribute, what do you and your team do?

GI has brought everything to the table. I don't know how any of this works. They got us incorporated, hired our first person, rented lab space, reviewed contracts - I wouldn't have done it, I don't have the time or inclination. The team made it seamless. From Patty, in the back office, to Paco working as a Fractional COO, they framed our company to make sense and help people understand the value.

Besides doing everything except the initial idea, they allowed me to not quit. My goal is to do great research. GI has allowed my lab to do more important things than ever, while building a company with practical applications that can make an impact. That's huge.

Also, GI has helped us move into the next phase of building value. While they continue with back office infrastructure and begin to organize meetings with companies and strategic partners, I get to focus on development and impactful IP.

PACO CIFUENTES, PHD

How has the partnership experience been for GI?

To get everything up and running we developed a valuable business model and unique selling proposition.

We handled the back office and infrastructure work like finding an incubator space, filing the incorporation, the tech transfer work, hiring the Director R&D and IP lawyers. We were there to make Marvin's life easier.

We began to industrialize official interactions with pharma companies to understand use cases and requirements. We analyzed what is needed for future markets.

We also started to put Marvin in touch with our other companies that we know could work together to create amazing solutions to market problems. Complex problems require complex solutions. GI is in a unique position to make connections under the GI umbrella and our companies want to collaborate together.

MARVIN WHITELEY, PHD

Final Thoughts

Because we have been so cash efficient, we are still working off of the initial infusion from GI.

Also, the network of GI is incredibly valuable. Working with a company that is always looking for new companies to build, they bring people and companies together that have clear synergies. Being part of a network that can work together will be a huge benefit to all of us. Plus, the GI team is up for anything.

PACO CIFUENTES, PHD

Final Thoughts

Marvin had an amazing discovery, but was looking for a partner to understand its market value and to start a company.

We are all so motivated by the impact his technology can have. My dad died of sepsis, I understand how infectious disease impacts everyday life. COVID has shown us how vulnerable we are. Developments like Marvin's can change the shape of our society - it's concrete and impactful.