Bonus Episode 4, Bitten by Inspiration, June 7, 2022

Tim Solberg: I couldn't figure out why I was so sick. And so I went and had COVID testing. I thought, “Did the Delta virus break through my vaccine?” because that's where your mind goes right away, because your whole body aches.

Kurt Greenbaum: From Olin Business School at Washington University in St. Louis, I'm Kurt Greenbaum, and this is *On Principle*. Welcome to our first bonus episode following season two of the podcast. We're working hard on season three with more stories about pivotal moments business leaders confront and what we can learn from those stories. Meanwhile, we thought we'd explore some different angles in a couple of season two interviews.

Today, I'm returning to a conversation with my colleague, Tim Solberg. Tim and I talked in October 2021, just before Halloween. We met to discuss real estate developer Steve Smith and the winding path behind City Foundry, his retail and commercial development in midtown St. Louis. We called that episode "The Inspiration," and in the course of our conversation, I also learned how Tim was bitten by inspiration for another project. And I'm not speaking metaphorically. It's inspiration he probably would rather have not received.

Tim Solberg: A recluse spider bit me last July, and I ended up in Barnes Hospital in the emergency room on IVs. I didn't know I'd been bitten for two days. I couldn't figure out why I was so sick. And then we saw the bite mark. It's a black hole in my back, sort of right behind my heart and lungs. The toxicologist said, “The reason why you're having difficulty healing, why this is so bad, is that it's by your vital organs and your body's gone into a real immune response, and we need to flush it out of your system.”

Kurt Greenbaum: Now, again, this happened about three months before Tim and I first talked. Tim is a professor of practice in finance and serves as Olin Business School's academic director for our corporate finance and investments platform. He's well known for the work he does with Olin students on heavy-duty real-world projects involving corporate finance. We'll get back to that shortly. But did you hear what Tim just said about his treatment? The toxicologists said they needed to flush the venom out of his system.

Tim Solberg: There's no antidote for this venom. They give you massive antibiotics, but that's to stop the infection from spreading on your skin. And he said to me, because I thought, well, the antibiotics will cure me. And he says, no, the antibiotics are to stop the infection from spreading. There is no antidote for the venom. It has to be flushed out of your system. And it was a bad bite because it was near ... it was in

my back by my lungs and heart. So the venom had been pumped. And so they flushed it out, and it inspired me. It was the unexpected project in the sense that I said, I'm going to do a practicum, and we're going to start connecting the dots of financing and research, starting with the toxicology department at WashU Medical and the Cortex. I met with people there, with my student team about “How do you finance this? Where does the research come from?” And it was recommended the NIH would consider this an orphan drug, so try that approach.

And my students being international, we've got a sub-team in China that's researching pharmaceutical institutes in China. I know Costa Rica is a big source of anti-venom and Mexico as well as Arizona. And we are reaching out to put together a project on what would this look like, and how can we put together the researchers, the pharmaceutical, the R&D and come up with a distribution system for this? So it was an unusual start. But it's let's find a solution to it. That's not economic development in the real estate sense, if you will, but it's biological development from an unexpected source.

Kurt Greenbaum: What you're telling me is you get bitten by a brown recluse spider, and it prompts the idea that you can leverage your talent with finance and putting people together from different parts of the chain to try to figure out a solution to this and ...

Tim Solberg: Exactly.

Kurt Greenbaum: ... see if there's a way to develop this anti-venom and distribute it to places where it's needed.

Tim Solberg: Not only that, I think there's an economic need for it in the sense that if I had known of it, I would inject me with that antidote. Trust me. I know other people would feel the same way. So, yes, there's a medical need.

Kurt Greenbaum: Well, you're not the first person to ever be bitten by a brown recluse spider. So what? What do you suppose took so long for somebody to get the inspiration.

Tim Solberg: Even though they exist, and once you've gone through that, you hear horror stories of other people going through it. But I'd never really heard of it before that. You know, I had heard of one other person going through it, but it's as our advisor at BioGenerator St. Louis in the Cortex said to me, Harry Arader said, it's probably because, yes, there's a steady need for it, but it's not like hundreds of thousands of people. It's, you know, 10,000 people a year, something like that. So that's why it might be considered an orphan drug where there's ... it's a smaller population. But as the toxicologist said to me, you know, there's an antidote for rattlesnake bites and scorpion bites. And so we need to do research on this and ... and find the antidote.

Kurt Greenbaum: Where does all of this stand in the collaboration among different agencies and different departments at the university?

Tim Solberg: Well, I'm working with WashU Medical. I'm working with the business school, and then we're reaching out everywhere. So it's a work in progress. I mean, it's ... it's at that point where it's connecting the dots. It's ... it's like in this Foundry development case, Steve Smith had to keep on connecting, you know, the developers and the people who had leased and people who had financed. And we're looking for financing for drug research and development. We're looking, you know, would this be a venture capital thing or would a big pharmaceutical company that does anti-venom, would they do research?

Then we just found out the American company that did that was just sold to a European company. So we're just trying to figure out where is the best place to do this research. And we're finding around the world the centers of research and reaching out to specialists, because in my speaker series, I run into Wall Street people. Every venture capitalist, every investment banker saying, “Who do you know in biotech? Who do you know in pharmaceutical development?” And so we're just networking out from there to see how to connect the dots.

Kurt Greenbaum: A few months after we first talked, I asked Tim for a quick update. He sent me an email reply on graduation day in May 2022, and in that response, Tim was happy to share that one of our MBA graduates, Peter Schlafly, had led the anti-venom practicum team he'd put together in the fall. After reading that, I asked Tim to jump on a quick Zoom call with me so I could ask more questions about the student project he put together. You also might hear Tim's golden retriever Grey in the background.

Tim Solberg: We had a team of about 20 students both in the US and in China, and so we divided them into four sub-teams. First, one team researched anti-venom in the United States. One researched for the companies in China. And another looked in South America and Mexico. And one of the students found in Arizona, in Tucson, Dr. Boyer. And she had done original research, and she is considered by many doctors, we found out in the anti-venom community, the leader in the United States. I had a top doctor from Barnes Hospital and the University of Washington Medical School who is an expert in this. And he said she is considered the best in the country in terms of research. So we reached out to her. She was very gracious and gave a history of research on the serums, and she said she has done original research herself. She believes has something that will work, but it would take $150 to $200 million to do the complete testing and launch for this as a pharmaceutical drug in the United States. Right now, she's at a point where she needs to find funding to do this kind of research.

Kurt Greenbaum: Tim's talking about Dr. Leslie Boyer from the University of Arizona, where, among other things, she directs something called the VIPER Institute. That stands for venom, immunochemistry, pharmacology and emergency

response. But for Tim's project, finding a possible anti-venom treatment wasn't the end of the project.

Tim Solberg: So they researched what labs we're working at, what universities, and from there, we did some pro forma modeling like, "What would it look like? How much would it cost to do the research and how much would it cost to launch this drug?" And again, Dr. Boyer was instrumental in guiding the students in this research.

Kurt Greenbaum: I understand. So … so that was sort of the business tie. It was creating this financial model. So is there sort of a next step at this point or have we turned the page on this ... on this episode?

Tim Solberg: Well, the practicum did end with some recommendations, and my personal desire with this practicum and the next step is to find funding to connect Dr. Boyer with somebody with deep pockets that will fund this research. And maybe it's a health foundation or an endowment or foundation that is concerned about health.

Kurt Greenbaum: So how does it make you feel to see the progress that the student team was able to make on something that literally bit you on the back?

Tim Solberg: Yeah, I was … I was thrilled. And I learned about the needs there that, you know, there's populations that are very underserved in this. And even somebody who may be affluent, you might not be able to get … get a serum. It's sort of an area where there is research. We know what to do about it. I think we just need to say this is worth funding. I would think some people would step up to the plate with this.

Kurt Greenbaum: And that's today's bonus episode of *On Principle*. Many thanks for listening and thank you to Tim Solberg for sharing his story. And we're glad he recovered from that bite in the summer. If you're just catching up with *On Principle*, please visit our website at onprinciplepodcast.com where you can listen to all our past episodes. You can also find links to *On Principle* in your favorite podcasting app, where you can subscribe so you don't have to miss an episode. If you have any comments, questions or episode ideas, send an email to Olin podcast at W-U-S-T-L dot E-D-U. That's olinpodcast@wustl.edu. *On Principle* is a production of Olin Business School at Washington University in St. Louis and comes to you with creative assistance by Katie Wools, Cathy Myrick and Judy Milanovits. Special thanks to Ray Irving and his team at Olin's Center for Digital Education, including our audio engineer, Austin Alred. Jill Young Miller is our fact checker. Sophia Passantino manages our social media. Mike Martin Media edits our episodes with original music and sound design by Hayden Molinarolo. We have website support from Lexie O'Brien and Erik Buschardt. As dean of WashU Olin Business School, Mark Taylor provides support for this podcast, which is the brainchild of Paula Crews, senior associate dean of strategy and marketing for the school. Once again, I'm Kurt Greenbaum, your host for *On Principle*. Thanks for listening.