

STARTUPS: THE NEXT CROP OF AGRIBUSINESS LEADERS

Panel Moderator: *Paul Schickler*

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Panel Moderator

Paul Schickler

Member of the World Food Prize Council of Advisors

Liam, thank you very much. Great job, and it's a wonderful message. You know, we've got Bayer Crop Science talking about the technology that they're going to bring to help solve these challenges. Next is the startup community really bringing a new look, some new ideas, new innovation, and bringing in some significant venture capital funds to tackle the problems. And then next after this panel is a panel discussion on taking that technology to Africa. So a real solid combination over these last three sessions.

If I could ask my panel members to come up to the stage, we'll get started with this session. And what I will do first is introduce the panel and ask the panel members to briefly describe their business or their activity. And this is a different segment of agriculture, food and investment or technology, and we bring, I hope, excitement, energy, motivation, passion, all those things. So they're going to describe their business in less than one minute. This is going to be fast paced, and we're going to try and keep the energy level high.

Panel Members

Thomas Laurita	Chief Executive Officer & Board of Directors, NewLeaf Symbiotics
Lucas Mann	Co-Founder & Managing Partner, Acre Venture Partners
Ponsi Trivisvavet	Chief Executive Officer, Inari
Karsten Temme	Co-founder & Chief Executive Officer, Pivot Bio

Paul So first is Ponsi Trivisvavet. She has had a long career at Syngenta and then Indigo but currently is CEO of Inari. Describe Inari, please.

Ponsi Thanks, Paul. So we are essentially a plant breeding company, and our intention is really to disrupt the seed industry through our technologies as well as the business model. So the question that we ask is actually – How do we reintroduce the genetic diversity back to the crop in order to address the winning food system? So what we are doing is not asking about a question of how do we feed 9 billion people by 2050. For us the question is – how do we actually do it without starving the planet? So essentially where we are right now we have roughly 65 people, 55 of us are

- scientists, across backgrounds, whether that would be medical research applying to agriculture or from academia. We are based out of Cambridge in Massachusetts. We also have operations in Indiana as well in Ghent, Belgium, so that's roughly about Inari.
- Paul Great, thank you, Ponsi. And I should have said Ponsi's educational background, she has an MBA from Cornell University. Next to my left is Tom Laurita. He is CEO of NewLeaf Symbiotics. His educational background is a degree from Brown University and Yale and a PhD in political economy from RPFU. I don't know what that is, but it's in Moscow, and it's part of Tom's unique career. Tom, what's NewLeaf?
- Tom That's all you need to know, that it's in Moscow. So NewLeaf Symbiotics is a microbial discovery commercialization company based in St. Louis, Missouri. So we are one of the companies at the forefront of trying to understand how plant-based microbes, or soil-based microbes, can change agriculture in a sustainable way. Our focus is on one particular type of microbe, so as the world leaders in understanding how this microbial family lives with plants, what the symbiosis is or are (because there are thousands, of course, of different strains), and turning these into useful products for farmers. We introduced our first two products in the U.S. this year, one in soybean and one in peanut. We'll be introducing two more for the following season, so we're in a very exciting space, as I think everyone up here is, and very happy to be part of this panel.
- Paul Thanks, Tom. And to Tom's left is Karsten Temme, CEO of Pivot Bio. We've heard a lot about microbes already today. Tom just said it. Now we've got more microbes with Karsten. But Karsten's background is a bachelor's degree from the University of Iowa and then the PhD from University of Cal-Berkeley. Karsten, what's your business?
- Karsten Hi, everyone. My vision is based on bringing better efficiency and resiliency to our farmers. And Liam did a great job highlighting the hope of having a nitrogen-fixing microbe for corn or other cereal crops. And I'm proud that my team launched the world's first product that can fix and supply nitrogen to corn, just last week. And we really are leveraging a new insight into the crop's own microbiome for fixing nitrogen, and it's completely changing the way we think about managing nitrogen in the field. So for us, one of our core values is we'd like to inspire each other. And I think a lot of my fellow members on the stage here inspire us.
- Paul And of course we've got a lot of excitement in the startup community, but we need someone, many people to fund it, all these great ideas and great people. And that's Lucas Mann, partner with Acre Venture Partners. Tell us a little bit more about your fund.
- Lucas So I'm lacking advance degrees in microbes, so I hope you'll bear with me on the panel here. But my name is Lucas Mann. I'm a co-founder of Acre Venture Partners. It's a venture fund based in California who is focused on food system investing. We've put together a unique alchemy, we believe, because, as lots of folks in this room know, these days it's quite vogue to be an investor in the food and agriculture businesses. So we wanted to anchor that into practical and pragmatic experience. So

as a group of partners, we come from operating agriculture, large-scale consumer package goods companies, and some White House policy. And so we do that in a model of collaborative disruption with the big players.

Paul And Lucas has a Bachelor of Science degree from the University of Santa Barbara. So a great panel here, and what I'd like to start with is to hear from each of the four about where we've come from. Clearly there's a lot of interest in startups, a lot of activity, a lot of new money. And also, as I look at this field, I am also seeing new players come in behind the funds, even things like Google, Amazon, others that aren't traditionally in agriculture but entering agriculture.

So bring us a little perspective on what has transpired over the last ten years in agtech to create where we are today this excitement around agricultural technology. Karsten, would you go first?

Karsten Sure. I think it boils down to three things. One of those is that we have a confluence of a lot of new technologies that's highlighted very frequently across the last few days. But it pairs really well with a growing interest among investors to branch outside of some of the traditional spaces, and it's a reflection of new money being available. But fundamentally we have a new set of challenges that consumers care about. And the thing that I think we've seen is a lot of industry has been consolidating across the last decade, and innovation has the potential to come from somewhere new. That effort of looking for a way to deploy capital efficiently is now kind of shifting towards some of the smaller companies or new ideas popping up from places around the globe.

Paul And, Lucas, you even mentioned in your comments that this space is in vogue now. So what's causing it to create this excitement and bring new investors in?

Lucas So we look at it from a food system perspective, which obviously dovetails into agriculture. But when you look at the set of emerging technologies and direct-to-consumer channels and the kind of rise of opportunity, folks that don't have a sort of grounding in agriculture come and expect what we would refer to as venture-style returns so things that are traditionally capital intensive. And duration is a problem, you know, these things take time and capital and expertise. And so one of the things that we really focus on is – how do you pragmatically root the capital to what's possible and what's true – evidence and science and those kinds of things? But more importantly in this moment where you can do all of these things, it doesn't mean that you should, and it doesn't mean that they will be adopted. And so how do you have a deep enough understanding of the whole supply chain and the whole value chain to understand what things are possible from a customer perspective and a consumer perspective?

Paul Ponsi, what would you add?

Ponsi Oh, I'll add one thing, just the observation around investors. It is true that it is about innovation, but from my experience over the past two years coming into this world of startups more... It's quite encouraging that, whether we like it or not, all of these investors ask the first question around – what are you helping in terms of the challenge of the food security? Actually, that's the first question before the

innovation. And we started to actually see the quality of those investors a lot more, whether that would be the family funds, it has to come first that you can prove, you can actually create something around a winning food system; you can create something around the sustainability. So that actually helps more and more that the money that comes in don't actually come from only about a high tech but also the people who have the willingness to actually address the challenge of the food security.

Paul And, Tom, what I'd like you to speak about is—changing the topic a little bit—about going forward. Karsten just mentioned consolidation, and that's one change that is occurring now, but also technologies are changing. Consumer trends are changing. Environmental issues are becoming more and more important. And then if you look at the public arena, many institutions, whether they be research organizations, government organizations, academia are being squeezed for funding. So you've got consolidation, consumer trends, public funding maybe becoming a little bit more tough to get. And my sense is—we just had a review of the past, but if you look to the future, my sense is we've got a bit of a scene change going on right now with all of these combining changes occurring at the same time. What does that hold for startups? How can you take advantage of that or how can you prepare for that scene change that seems to be occurring?

Karsten Yeah, first of all, I agree with my fellow panelists. I mean, we're really in a disruptive moment, and this has been a very encouraging, from my point of view, series of conversations, including what Liam and Robb talked about today and Jim Collins yesterday in terms of companies recognizing we can't just be an ag input company. We are really being driven by what consumers want, and we see this. The big companies see this all the time, but we see it even more closely, because that is what's driving the investment thesis for many companies. In terms of where we're headed next, I mean there's not only disruption in the social environment and we don't only face these problems with feeding the world, but I think that technologies are now becoming very fluid. The whole opportunity around the microbiome in both human health and in plant health has become obvious, I think, to people. There's an expression that, "If everybody knows it's a good idea, who needs you?" and I think that companies like ours really do have to be at the leading forefront of recognizing these trends first and understanding the environment within which we're operating—big ag but also lots of other players in agriculture. So I think the real moment for disruption is now, and that's what's driving, I think, all the interest you're seeing in some of these smaller venture companies.

Temme And I'll build on that and say that the word "disruption" is a great way to look at it, because I think, like Ponsi mentioned, a lot of our investors will ask us about impact, but impact is also really a question in two ways. It's not just impact on our ability to literally clean up the planet, but there's a potential that power could begin to shift in the industry, that some new companies that have just gotten created in the last few years might begin to be the source of trust for growers around the world or be the source of advice that growers really turn to. And that could change the way our industries work. So the power of new ideas is what a lot of these investors get excited about and are really investing in. And it's a bet that maybe in the decade the

kind of transformational impact any of our companies might have is much bigger than any of us imagine right now.

Ponsi And it's quite interesting to actually be in this community as well, because in fact we kind of knew each other from the past before. And also it's the environment whereby you encourage one another and you want to bring in more startups. You invite competition, and that's how we see it. We want to see more startups. We want to see new ideas and even people to build on our new ideas, because that's the community that we actually get together for quite a bit among ourselves in terms of startups. And I think that's the kind of healthy dynamic that we see at the moment.

Paul So investors, are they anticipating or feeling this change, you know, consolidation, limited research coming from public institutions, consumer trends? What do you hear or see from investors, Lucas?

Lucas I can tell you what I think, and so one of the things that we talk about a lot and sort of jokingly call it the 3G effect, which is that you have this... Certainly in the agriculture business, consolidation provides opportunity, but when you look at the food business, you look at innovation, which typically you need long timelines for, and you need protected capital that doesn't get interrupted. So iteration and product line extension get sort of sold as innovation. Real and true innovation typically happens outside those companies, certainly true for the food companies. And so when we start to see folks that have deep, working knowledge of these companies — and Ponsi and her team are a great example — as an investor, and I'm an investor in Ponsi's company, a lot of that's to do with the team that she's assembled. These are people that have careers, decades-spanning careers that understand these systems deeply and are now able to come out, utilize these technologies and be collaborative or disruptive. Whatever they decide to do, whatever their approach may be, the knowledge base is extraordinary — and that's new.

Tom I could just add to that. We jokingly say that the team in our company are refugees from Monsanto and Bayer and BASF in a positive way, more like we've been incubated through these companies. But I think the opportunity for companies like ours that are really innovating in a space, who also understand how in fact real agriculture works, what the large companies can and cannot do and how those resources can be more properly aligned — that's a big part of the opportunity. And I think you're seeing that in many of the startups.

Karsten And there is a lot of cross-pollination across industries because of the nature of the businesses we run, that we're not just hiring a leadership team that has had decades of experience within the industry here today, but we're attracting folks who worked at Google or Facebook, and they no longer want a program, an app from your phone. They want to do something more meaningful. And when you get people with the most advanced degrees on the cutting edge of science together with folks who have seen firsthand what challenges within the industry are like, and you can take everybody out to a field and meet with growers, a lot of ideas bubble up that you might never imagine are potential solutions to these problems.

Lucas Yeah, just one little thing. I think one of the things that's really important as we go forward is that, as more capital comes into the space — and there's plenty of that —

this domain expertise is really important. So we do quite a bit of investing with the googles and mainline kind of investors, and they're incredibly helpful on the things that they understand well. As we go forward, what's really important, I think... And this is no secret to people in this room, I mean, there's tons of domain expertise and lots of investors that have been doing this for quite a long time. But as new capital comes in, things suffer, meaning valuations suffer – they get pushed up for things that are possible or not. And so this very kind of pragmatic approach, I think, which is anchored in understanding, becomes more important as more capital comes in.

Paul Okay, just a second, Ponsi. I'm going to come right to you with a related question on this. But it's interesting, the conversation has switched a bit to talent and the people. Tom made the comment about people coming from the majors into startups, talent acquisition and so on. I've been retired now coming up on two years, and I am being more active in the startup community, in the venture capital fund, and I find it exciting. And when I had the chance to lead this panel, I thought – okay, what do I want out of it? And this is what I wrote down – How do we get people to want to work for a startup? How do we get organizations to want to partner with a startup? Or how do we get young people to want to start a startup. So, Ponsi, you're a refugee from Syngenta. Talk about talent a little bit and how to get that excitement of either working with a startup, getting young people to start a startup. How do you create that excitement with the business that you're in?

Ponsi Sure. Yeah, I was going to address the point that as a startup you don't focus only on technology, and I come back again – we focus on impact. Right? So impact plus technology together. And because of the level of risk tolerance for us is higher, so we actually... When you have combination of impact and the risk tolerance, we actually can attract, and we are willing to actually get the people to come in. And we can attract the people not only from the industry and purposely for us. We look for the people outside of the ag industry as well. I'll give you a flavor that out of 65 people that we have, 55 are scientists, one third are actually from medical research, one third are actually academia – some of them have never looked at plants before. And the other third are actually agriculture. And the first two categories we are able to attract because of the impacts that we are trying to make. And whether we like it or not, actually a majority of our breakthroughs so far are actually coming from the one and two categories by having the category three to actually coach along the way and then get the real breakthrough out of other things as well. So I would say, Paul, essentially if you want to simplify it, it's around – make sure that it's not only about technology but is also about the purpose and the impact.

Paul Tom.

Tom I would add that I've done this several times, and I find the startup environment extremely exhilarating because you are facing all the challenges that Ponsi just named, plus you have a limited team, limited resource, and a big idea that you've got to get to. So your advantage over a company that can just throw 50 or 100 million dollars at something is you've got to be more nimble and you've got to be more clever about how you are dealing with all the data coming at you both from your own dataset, the environment around you. So it's also quite a challenge. As you grow, you need people from various walks of life of various skillsets, and then you need to transform that entire company, that entire group as the opportunity grows

and as you get to be a more mature company. So I would also say that it's really great to see all these young people here, all the students who have been... I don't know how many are in the room right now. But don't be afraid of a startup if that's where your heart lies. I would say that it's a very exciting area. You can attract great people. You can attract people from industry who have done well and are now saying, "I'd really like to see this other aspect of myself." So the team is... I mean, when we talk with investors, that is always the number factor for investors in venture, at least from my experience – Can this team learn from what they're doing? Can they grow through whatever challenges there are going to be? And are they going to figure it out? Because it ain't all figured out from day one.

Karsten That's a good point. You know, the day-to-day may not be that different from a lot of jobs, but the word that doesn't exist for us is "impossibility." Because we are trying to set our sights so high that the problem we're solving seems impossible. I mean, for our company, we're going after building products that fix nitrogen for cereals. That's been impossible for 125 years, until now. And the solution is not a linear solution. It's non-linear, because it takes people with different experiences to build something new together. And the day-to-day is about taking any little problem and figuring out a way to build around it, whether it's just figuring out how we work on a daily basis and how we eliminate unnecessary meetings, and all the minutia of work life that we all experience, or saying there's 50 years of institutional academic knowledge to build on if we just piece it together the right way and we can build a transformative product. So I think in any of our companies, the more we can find people who want to build and don't consider anything to be impossible, that's a great reason to come looking to join a company like ours.

Lucas One thing I just want to add, which is to some of the folks in this room. As you look at these three companies in particular, you'll find that they are startups, yes. Startup is a very broadly defined word. In this case, these are very well-funded startups, but I'm sure they all started with an idea. And with this rise of technology and people have intention, for us, for example, my fund is totally focused on human health. So you can create these outcomes, because you have these technologies and you have this institutional knowledge, but that starts with just one person. And so while we refer to startups in this case as being incredibly well funded, that wasn't always true, and I think that's important to bring energy and continued kind of innovation to the space.

Paul I'm going to just pause here for a moment. We've got about 15, 20 minutes left, and I'm going to try and save the last 5 or 10 minutes for questions from the audience. So you might be thinking of that now, so when we come to that time period you've got a question ready, so be prepared.

Okay, so we've heard a lot of enthusiasm. Money's coming in, new players are coming in, talents are coming in - agtech, a lot of new ideas. All that sounds good, but what are the challenges? And Lucas, I'm going to look to you first, because you're dealing with the investors. You need to sell people that they need to be thinking of this as a viable space. So you've got challenges – great ideas, but you've still got to work through the proof of concept stage. You've got to take an idea to the market. You need to take your idea and generate money. What are the challenges from an investor standpoint when you look at funding startups?

- Lucas Sure, so I think the increased interest in this space is actually a double-edged sword. So certainly it provides more opportunity, but it also again we keep going back to this idea of expertise. But unless there's a real understanding between the investors and the company on what's possible, you're going to get into a mismatch straightaway – and that becomes a fatal problem in most cases. So I think having a true understanding of who you're in business with and what that's going to mean over time – and I'm sure there's real stories here from these three and other folks in the room – I find that to be challenging. The other thing is, as more people... I come from startups, and that's all I've ever done, so I know that world; it makes sense to me. Risk is fine. It's a whole different thing, as some of you guys – I think, Karsten, that's what you've always done. But it's different. There is no net, especially in the beginning. And so that ability to leap, sometimes I believe that's an innate ability, it's not learned, and so that kind of real understanding of what you're getting yourself into, I think, matters. And you can see straightaway who is hesitating and who is not, and that's a big point of difference.
- Paul Okay, Ponsi, challenges that you think – sitting in your business, for the future, what are you worried about?
- Ponsi The challenge is actually how do I stay super laser focused in a way that we don't have unlimited resources. And with the team and the ideas and the technologies that we have, they're just so applicable to a lot of things. The question is – how do we actually make sure that we go about just these ideas for now, this geography for now, these crops for now? So for me it's – how do you do it in a way that you don't bring down the whole excitement of the team? So that's something that as a CEO I'm facing that for quite a bit. It's exciting.
- Tom Yeah, I knew Paul was going to come up with a trick question, because there really are no challenges so far that we've run across.
- Paul You're making it even more attractive for all the people we're trying to attract to this space.
- Tom Yeah, I think, Ponsi, that's a great point – focus in our company. Our chief investor calls it "puppy drowning," meaning you've got all these cute puppies. If you try to feed them all, they're all going to die, and they're all good, but you have to drown some. I know that's a little, kind of a harsh reality, but I didn't make it up – right? I've just been told that, "Tom, you've got to drown puppies." I would say one of the challenges is the alignment of the new data and the new learnings that are coming out of what we're working with in an environment that's... So we're all startup companies or well-funded startup companies, but we're living in an environment that is really changing fast. And you raised earlier, Paul, all the M&A activity going on in the industry. Access to the market is highly affected by that. So the alignment of not only which puppy do you drown but how do you make sure the ones you haven't drowned are progressing at a rate that corresponds to the bigger opportunity around you? I think that's really... It is a challenge to calculate that and to make sure your team understands it. Because I mean one of the key factors in the success of a company like ours is making sure the team is good but also is motivated, understands the strategy and is working to fulfill that strategic. So I would say that alignment is a challenge that we face.

Karsten And the one thing I'll add that I think has been hinted at but not mentioned is speed. And speed plays out in three ways. For me, almost 15 years ago I left Iowa to go out to California to cut my teeth in the field of synthetic biology. And I studied for my PhD on nitrogen fixation, so I've been working on building a solution for nitrogen fixing cereals for almost 15 years. And it's been a consistent sprint marathon, because, one, the problems that nitrogen fixing cereals can help solve impact us on such rapid timelines, we need a solution now. The second is, the only advantage I have over any big incumbent out there and the only way I'm going to stay alive is to move faster than them. And I can make decisions faster with my team. I can decide to bring new technologies together faster than anybody else can. And then the other challenge, though, is in the face of competition when other people see what they do and they decide they want to get into the space, we have to continue to execute and not just make promises but deliver on them. So hold up our end of the bargain to farmers, hold up our end of the bargain to our investors and to each other, that we can continue to execute. So speed is the name of the game in a startup and an emerging company. It's really the one advantage you have over anybody else who might be in a similar business.

Paul You're all an overnight success, all of you – right?

Karsten Also, it's hard to see why investors get a bad rap when you talk about puppy drowning. We don't need any help being disliked, so that's not great.

Q&A

Paul So let's see what questions there might be from the audience. One over here. Go ahead.

Q All right, good afternoon. Thank you. It's a very interesting presentation. My question is – throughout this session I've heard the word "innovation" used a lot, and I actually am with financial services and human centered design and design-led experiences. And I'm curious. To each of the panelists, maybe one to three words – if you were forced to not use the word "innovation," what word or words would you choose?

Paul Good, okay, go quick. This is lightning round.

Ponsi Teamwork.

Karsten Make your idea bigger.

Tom Focus and then innovation will come from that.

Ponsi More than one word.

Tom Innovation.

Lucas Mine are both collaboration and disruption.

Paul Okay, we're going to come back to "disruption" in a moment. Go ahead.

- Q Hi. Lia Lucas. I'm with Technoserve Mozambique. And, Lucas, you mentioned taking a leap, so I wanted to ask. I know there's no cookie cutter solution and every story is different, but what would be three to five key principles or things to have in place before taking that leap – so kind of non-negotiables for a promising startup?
- Lucas It's a great question, and I can only answer from my personal experience as an entrepreneur, which is what my training is. And the only way I can describe it is that (and my partners pick on me for this) is, I jump without looking. Every time, I put the airplane together on the way down. And that's the only thing I know how to do, so that's sort of in my DNA, so I couldn't really give you... I'm sure somebody can give you a great answer, but I've never spent a lot of time thinking about it before I've jumped. It's a gut thing.
- Karsten My answer is – Ask yourself the question, “If I don't do this, how long will it be ‘til somebody else does?”
- Paul Okay, we're going to jump to the other side of the room. I mentioned that I had some objectives when I took the responsibility of leading the panel. And they're right over here – we've got young people waiting in line, and women, young women who are going to make a difference in the world, so go ahead.
- Q Yes! My name is Caterina Schmidt. I'm with the Global Youth Institute – we're all over here. You mentioned the solution about creating nitrogen fixing corn, and I suppose it's through synthetic biology. I'm really interested in synthetic biology, and I'm wondering if that's a solution that can be applied to like other..., using those microorganisms that you've modified to be able to fix that nitrogen, in other cereals – I guess you're working on that – and how reliable that is. Because synthetic biology as a field is really unpredictable.
- Paul Okay, perfect, so Karsten.
- Karsten Great question. Let's not answer a lot of that right now, because the answer is we're trying to work with every crop out there that could benefit from the technology. The goal is to make something that is resilient for a farmer to use. It has to work really well and leave them with a better outcome than without it. But I think there's probably a lot of folks who would like to continue a conversation with all of us, so let's take a minute and maybe just give a good way to connect with each company, and then after this maybe we can find someplace on the side, and anybody can come talk to us evenmore, like right outside. Julie, what's the name of that room?
- Paul Sioux City.
- Karsten The Sioux City room – let's meet there, anybody who wants to continue the conversation.
- Paul We'll make that point, and we'll reinforce it at the close again.
- Karsten Sounds good.
- Paul Okay, good. Next over here.

- Q My name is Zelpha. I'm a student at the University of Nebraska Lincoln, and I love the way that you talked about the youth being involved and the fact that you say that it's a model you've got and if you don't do it, then how long until somebody does it. But my question now is – how do you get around that period that you are not necessarily that informed or you don't have that much knowledge, and you're not even that financially stable to be able to pay those experts, but you have an idea and you want to do it?
- Tom Can I start, because I'm the youngest person up here – you probably noticed that. I said to Paul, “Are you sure you want to call this panel of the young, just starting out?” so I have kids as well, and I would say you're doing it. I was so impressed with the openness and the questions that I heard during lunch from some of the students who were there. So this is what you've got to do. You've got to be not afraid to ask that question and stand up and pursue. So there's no one answer, and I'm sure my colleagues would agree. But if you keep that attitude of life and that attitude of curiosity, it's going to lead you to opportunities. That's kind of the whole idea of this approach, the venture approach.
- Karsten Don't be afraid about making mistakes. The best thing you can do is ask a question and realize that your assumption was wrong, because then you learn something new.
- Ponsi Yeah, that's the most important thing is, you're going to need to actually feel comfortable with admitting that you can't do it and then move on quickly. So the quick decision is the key part of making the startup happen.
- Lucas Failure is good.
- Ponsi Failure is good. We actually celebrate the failure, yeah.
- Lucas As the oldest person here, I would say that a contrarian point of view actually is important, and in some ways a less-educated point of view can be contrarian, because you don't know what are the limits. And so great entrepreneurs don't see the limits between them and the goal, while the rest of folks do. That's really important. In fact, the most successful company that we've been involved in, everyone that knew anything about agriculture said, “It has no chance.” I won't say what it is, because I don't want to get thrown out of here.
- Paul Okay, we've got time for two more questions, so the young lady here, and then we'll go back to this side of the room.
- Q So I'm Rachel. I'm from the Youth Institute, and I want to know what is everything you guys wanted to do, happening, or is everything... Like you had bumps in the road and things like that. Like are you leading up to really what you guys wanted to do in the beginning?
- Paul Great question. Isn't everything just working perfectly, no bumps in the road at all?
Tom.

- Tom Yeah, a couple of bumps. I think the point is what... If you just have, well, I'm going to do this and make this product at this time, that's probably not going to happen. What is happening, at least in our case, is we've got great ideas, we've got great support, including investors and board members and a great team. So we're actually discovering what that goal is as we go along. Obviously, you have to have some direction, but if you're not open, if you just say – well, I gotta do this, and if I don't do this, I've failed – you're going to fail because nothing is going to go exactly as you planned. Nothing in my life ever has.
- Ponsi So like I thought it differently, actually working for a startup. What you need to have is the vision and then six months planned. Don't go for a five-year plan, three-years plan, because you're going to figure out that within six months you find something new that you never thought about it before and it's actually even more exciting than that. As long as it's aligned with the vision, that's what's important.
- Paul Okay, last question.
- Q Thank you. My name is Mark Gee, a student at Perdue University. I was wondering – how do you share your vision without losing your competitive advantage?
- Lucas Great question. Somebody ask Ponsi.
- Karsten There's actually probably a lot more people who will think you're crazy than want to copy your vision.
- Lucas If you're doing it right.
- Karsten Yeah, and there's a way to talk about what your vision is without having to talk about the details of your technology. And that balances something that you can protect with NDAs or different types of things, the time when you need to get into the details. But really being able to motivate people talking about the vision is something that I think you'll find to your advantage more often than it would come back to harm you.
- Ponsi I'll answer that question, because if you go to Inari, I'm not sure whether you understand everything. So basically what we do is we essentially communicate why we do it and then while we do it we essentially don't talk about how we do it. We are happy to talk about that in the high level. What's important is how do you go about it and who are the audience. You have to make sure that the communication is creative enough, and there's no one size fits all, so you have to have new way of communicating. And for us, Julie Borlaug is leading our communication team here and has done a fantastic job. There's no one size fits all, and it has to be different. It has to be purposeful.
- Tom Not to be a party pooper, but I would add that in our case we did stay under the covers for a while until we had established some IP. So IP, intellectual property protection, is clearly part of that. As your vision evolves and grows, you do need to protect your ideas, and then I think there is a stage at which you get... I mean, in our case it's taken us five years and \$50 million to do what we've done. So is Bayer or

- some huge company going to say – well, let's just copy that. Here's 50 million bucks, come back in five years. You know, that's not going to happen. So you eventually have to get to a stage where you are able to talk about what you've learned and what you own and have some protection for it.
- Paul Okay. We're going to wind down here, and I'm going to ask each of the four to... Lucas, you have something burning to say.
- Lucas As long as there's one more opportunity to say one thing, then...
- Paul So we're going to go through a real rapid round here. And this is exciting, clearly. We're talking about microbes, plant health, plant vigor, channel disruption, nitrogen utilization, digital application to solve every problem in the world. And of course all these technologies and ideas are going to work 100%, no doubt about it. So when they do work 100%, tell me in your mind what is agriculture and food going to look like ten years from now, given the success that you are all going to drive over that next period of ten years. So, Lucas, you're a little bit more prepared because you were anxious to get going, so...
- Lucas I want to talk to the Youth Institute, so I'm not prepared, but I'm going to do it anyway. For me it's about – how do you affect populations in a meaningful way? How do we leverage these technologies that allow us not just to feed people but to feed people well? I believe we'll have opportunity to create therapies that are delivered through food, and the breakthroughs that we're seeing now are the beginning or maybe the continuation of that. And just so I don't lose... The one thing I just wanted to say to the Youth Institute is that this room has an incredible amount of knowledge in it, and that means there's an incredible amount of learning and opportunity. But don't let any barriers come between you and what you want to do. Learn from everybody here and find what your opportunities are, but don't be limited by anything that you see.
- Paul Karsten.
- Karsten So my ten-year vision is that, when you plant a seed, a microbe comes with it. That means you don't have to make additional efforts to fertilize a field, and that's something that my team will deliver on for corn, wheat and rice across the next decade. So all of those times you drive a tractor or you try to figure out how to manage and predict the weather so that that fertilizer doesn't wash away – that will go away. My ask, where I need help, is thinking about how to translate what might work for a corn farmer down the road outside of Des Moines to other parts of the world, to other cropping systems, to other ways of managing fertilizer in different local markets, and how to get product to all the farmers of the world. So anybody who wants to help us move to other geographies – come find me, and you can always send me an email. It's karsten@pivotbio.com, and then we'll be outside afterwards.
- Paul Tom.
- Tom So I think ten years from now our goal, and I think probably it's broader than just our company, is that it will be obvious that of course the microbiome is part of the

entire cropping systems – it's part of how agriculture is conducted in a way that's not obvious today. The same with digital, by the way, which I think is happening more quickly. So I think that does begin to transform the way we look at agriculture and the way we look at the opportunities in front of us. I also think that the major companies will still be there, and there will be synthetic chemicals being used, but I think that we will be finding real opportunities to change the balance and the way that these chemicals are applied.

Ponsi So for me is, I hope there's no ending, there's no such a thing as you said, we're gonna get here and then that's done. But at the minimum, I hope that we will get to the word that you heard me say – winning food system. And in that definition, it means that it's not only about the productivity but when we as Inari can do the plant breeding to create the seeds that are much more resilient to climate change, which is the real life, can get the seeds that could bring down the chemical usage, to get the seeds that could create the healthy food. And more importantly is – how do we actually get the profitability of the farmers to go much, much higher than today. So that's when I would actually define it as when the winning food system started to have the clock running around it and contribute to help that.

Paul Great, great. Okay, thanks to each of you for your contributions today but more importantly to your commitment to change and grow this industry. Thank you very much.