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MIKE LICCARDO (Sponsor): Thanks for joining our webinar **The Venture Investor Outlook and Mindset: Pitching the Science of Tomorrow** where a panel of 4 investment experts discuss biotech funding in the current economy, how to position your company to get funded and what investors are seeking.

We are joined by Mike Powell, executive partner at Omega Funds, Shobha Parthasarathi, VP of external innovation and new ventures at Xontogeny, Kanad Das, director of the Boehringer Ingelheim Venture Fund, and Ed Saltzman, Head of Biotech strategy at Luminaty, who will moderate.

Ed will introduce the panel in more detail. Next, we'll discuss the panel's mindset consider the current environment. Next, we'll move onto how companies should position themselves optimally in today's market. Finally, we'll conclude with live Q&A.

ED SALTZMAN (Moderator): I want to thank the BIO International Convention taking place in San Diego on June 13-16 and thank to ShareVault for sponsoring. I'm going to turn to the panelists and let them introduce themselves. Shobha:

SHOBHA PARTHASARATHI (Panelist): Hi I'm Shobha Parthasarathi, VP of external innovation and new ventures at Xontogeny. Xontogeny is a Boston-based virtual accelerator associated with the Perceptive Advisors venture fund, and we make seed and series A stage investments in biotech, med tech, diagnostics and digital health as well.

MIKE POWELL (Panelist): Hi everyone. I'm Mike Powell, I'm executive partner at Omega Funds. I've been in venture for 20 years and before that Sofinnova, Genentech, Syntex Research (Roche). I've built a number of great companies and that's what I plan to do for the next few years to, so good to be here today.

KANAD DAS (Panelist): Hi, I'm Kanad Das with the Boehringer Ingelheim (BI) Venture Fund where we make seed and series A investments in technologies. We're affiliated with the BI pharmaceutical company. The thing that makes us different from others corporate ventures is we're a separate legal entity and don't use internal scientists for review. We make decisions as a partnership. Looking forward to the panel.

ED SALTZMAN: I'll start with some scene-setting comments. The webinar has an interesting title: "Pitching the Science of Tomorrow". In the 2nd part of this discussion we'll turn to the panelists for some hands-on advice. The panelists are very used to hearing pitches - a good portion of their time is spent hearing pitches. But let's stage with the first part: pitching in this environment, which is not the same as pitching in the prior environment… the challenge is much higher. Over the recent past in biotech circles, pitching, in totality, has been successful. I would argue the current troubles in the market show that perhaps there has been too much pitching: too many early-stage companies pursuing rapid IPOs. Perhaps that was related to the former market overall. For whatever reason, whether it's too many early-stage companies, too many companies, global instability with the situation in the Ukraine, inflation or flight from risk, we are in a *funk*. And this is one of the worst funks I've seen in a long time. I don't want to go back and bring back the bad old days of the global economic collapse: a very different

situation with very different drivers. But we have a problem. Perhaps the best indicator of the problem is the NEV: negative enterprise value. That is simply the market value of the company vs. the cash. You would think that most companies would have cleared that very basic hurdle: their market value would exceed their cash. But you might be surprised or disturbed that as recently as last September there were 21 NEV companies, and 2 quarters later it's 154. Just last week we added 13 more. Thanks to Torreya for throwing together those numbers. But it's not just those indicators. There are other troublesome ones. IPOs, which recently generated just south of $4B (as of December) in fresh capital, have literally flatlined. There were no IPOs in the last week. The IPO queue remains frozen in place. You may see companies dropping out of that from time to time as the queue is too long, which is disturbing. Finally, the trends in M&A mirror the IPOs. We had two small deals last week and those deals made more noise than the size of those deals would indicate. The GSK/Sierra deal was a $1.9 billion deal. That's not chicken feed, but that is a small deal in the prior environment we're used to. The other deal was $906M. So, how long this lasts, and how bad it can get, is anyone's guess. For the moment the attention of the experts on the panel has to be focused on how the challenges in the public markets affect their approach to investing in private companies, and how they allocate capital. So that's going to be the first part of the discussion. Then we'll shift to a more practical level to determine how *newcos* can pitch VCs in today's market condition, where most exit routes, at least where we sit today, are blocked.

First question: Have things changed in the aftermath of this draw-down in the market? Has everything I just described… has it changed what you do, what you think about, how you think about companies, and how you allocate capital?

MIKE POWELL: Yes, things have definitely changed in a bear market like this. People look at reserves for their companies a lot tighter, they allocate cash a lot tighter, they look for arbitrage in the companies, converting $1 of cash into $1 worth of clinical trials is no arbitrage. We're looking to how to get $1 cash into $2 worth of trials. But let me remind everyone we've just come off of a decade of the best growth in biotech that we've ever seen. Some look at it like "OMG, we're in a bear market, how terrible". But I and a lot of other VCs look at it as "this is a time where everybody's taking a breath… the world is not ending". A lot of these companies are great companies. We're going to have to tweak things in the next year to get through this nader of cash, etc. Examples of things that people are doing now to take advantage of this: at Omega we are looking at more undervalued public companies right now than we did a year ago. That is something a number of VCs are doing as well. Then, of course, a last point that happens is there's a flight to quality. Anytime things get tough, VCs dig back in and try to figure out what are the best companies where I can put my money.

ED SALTZMAN: Shobha, how does what I've described and what Mike has described (maybe we're taking a breath and it's a pause but the fundamentals are still there)… how does it affect your day to day? Are you looking at things like cash burn rate more closely than you used to?

SHOBHA PARTHASARATHI: The audience really has to consider what type of company you are. If you're a very early stage company… there's been so much money raised in the last couple of years, there's plenty of dry powder left for those early stage companies that are looking for money, as long as you're

developing the right technology, you're filling an unmet need… there's absolutely money for you, the early stage companies. I've recently been listening to/readingSteve Jobs quite a bit where he talks about how focusing is basically saying 'no'. Are we doing that? Yes, we are definitely starting to do that, which is focusing more… agreeing with Mike, we are definitely taking a deeper look and saying 'no' more often than we might have been earlier. I don't think brand new companies should be concerned. We are not changing our day to day as much. There were 2 announcements made last week of seed and series A companies made though us. Even through Covid we were actively investing. It's impacting the public markets more and as a result, public companies. But if you're an early-stage company, there is still plenty of room for you to look for money.

ED SALTZMAN: Kanad, how do you see this world? I appreciate you drew the distinction between BI's fund and the classic pharma venture fund. You do your own diligence and you don't leverage the scientists with the larger company. But from a fund associated with a company, does the world look different from what it does to the more traditional VCs?

KANAD DAS: It certainly does. The reality is some of the exit pathways are blocked. I do agree with some of the things that Mike and Shobha have said: that folks are focusing on quality and clinical endpoints. We're just thinking about a longer runway and being asked to fund the company for longer. In the past a preclinical IPO was possible or perhaps a preclinical M&A. Now the focus will be on high-quality, early-stage clinical data before real value inflection point. Obviously that's very indication and context dependent, but from our perspective we're thinking about longer runways. The 1 year - 2 year period that a lot of people are talking about is what we're trying to get through, and fund companies and keep our portfolio alive during that period of time.

ED SALTZMAN: A question related to huge inflows of capital that came into early-stage companies over the last several years, as Mike said, the best times we've really had from that standpoint. Many of those companies are significant capital eaters because they're pursuing the broad disruptive discovery-stage platforms. What's your feeling for how the conditions in the market have changed - that old debate between a platform vs. product company? The platform companies do gobble up a lot of money before they can progress these programs to the clinic. How are you guys wrestling with that?

MIKE POWELL: I think that every firm has their own strategy. At Omega our strategy is we love a platform tied to a company, that's terrific. But we actually invest in that platform to get products out of it. If it's a platform for platform's sake… let's make a number of drug candidate and license them off to other folks… that's not as interesting as let me make 2, 3, 4, 5 great candidates, and then I will develop them. So you'll see resources transition from maybe a 50-50 split on platform vs. early-stage development to 3 years later you might be looking at an 80-20 split in resource spend: 80% on clinical spend and still a little bit on platform. Over the course of 2-3 years in a company, I like to see the transition move from one side to the other.

ED SALTZMAN: Kanad, what do you think about the product vs. the platform divide?

KANAD DAS: We're platform investors. We're attracted to large disruptive biology, where multiple shots on goal can come from one company, and that's certainly something we have invested in and will continue to invest in. As Mike says, we like to see transition in the growth of a company where the platform really validates itself in preclinical models, and hopefully some of those assets are developable. In a 2-3 year period we like to see multiple development candidates, and focus on really showing that… we like to say that we judge the tree by the sweetness of the fruit that it produces. Ultimately in our business in therapeutics you have to have positive clinical data, and that's what any platform should produce from the therapeutics perspective.

ED SALTZMAN: Shobha what's your view there?

SHOBHA PARTHASARATHI: We're primarily, I would say, an asset-focused company. Our goals is to take companies like that that have a single asset or two, and get them quickly to the clinic. Not just providing financial benefit, but also providing mentoring and guidance to get them into the clinic. That's what is differentiating for us… that we manage these companies virtually and take them to the clinic. We're open to first-time entrepreneurs who haven't done this before. That's our primary mandate – we focus heavily on that. If you look at our portfolio you see that. That's not to say we don't focus on platforms… for the right platform, where we think we would have an impact and bring value, we would absolutely look at it… and we have invested in that… but it's definitely always going to be the smaller fraction of our portfolio.

ED SALTZMAN: No one can call the market, if we could no one would be sitting here doing this. If we could we'd all be out pursuing our great wealth from calling the market. [laughter] But there's been a decided trend in the VC world to really early investing. The exit routes for these companies, which were wide open, look like they are shut. So Mike, I will redirect this to you. I agree we've had some great times. But when we come out of this funk, which I know we will but I don't know when, will we go back to the way it was prior?

MIKE POWELL: A good investor will keep their options open to have as many different avenues to exit as possible. So when we build a company, we're not building it like "this is an IPO company 3 years from now and that's all we're doing." We will build it to do partnerships… you can run companies for a long time on great partnerships… we'll build it to have different intersections of M&A… we will be talking to pharma all along the way so that if there is an intersection to be bought out we're happy to explore it… and obviously the IPO. Different firms have different ratios for what portion of your portfolio exits via M&A vs. IPO. It also changes depending on what vintage it is, what year it is. The thing that we are doing and a lot of VCs are doing right now is making sure that when we do a 1st round in a company, for example, yes we could raise $20M - $30M and run it for a year and half or 2 years, we consider: Why not raise $40M - $50M? Instead of having 2 VCs around the table have why not have 3 or 4 VCs around the table – pick VCs with deep pockets; pick VCs with knowledge or background of the sector that this company is in; pick VCs that have great ability to fund the company longer term even if no new investors show up a year from now, we know that we've got 4 great investors around the table. So that's what people tend to do when times get tough: they just build for the future. Our fund is a $650M fund – we

have to put money to work. And we are putting money to work. But we're putting it to work with other folks who think like us that know we can go the distance.

ED SALTZMAN: I think Kanad's going to have a little bit of a different perspective on this, but I'm going to go to Shobha first. I know you are an asset-specific investor at Xontogeny, but does the condition force you to consider the stage of that asset? Is the market going to rebound to what we used to have? Or it's really driven by the fundamentals of the data and the de-risking of the asset via proof of concept? That was the market where VCs used to be able to map the value inflection and invest just ahead of the value inflection. Obviously we've moved everything back quite a bit over the last several years. So where do you sit when you look at an asset? Is an early pre-clinical asset too early? What's your thinking about that?

SHOBHA PARTHASARATHI: For us things haven't changed. It's very clear. We need to see some level of animal validation done. So if you've got data in an animal model, we're happy to take a look and it's a good time to start talking to us. Because we don't have a focus area or a niche, we're so broad across therapeutics, diagnostics, devices, all indications, all modalities. So there's enough for us to look at in terms of companies that have some level of in vivo validation done. That hasn't changed and we haven't gone earlier and I don't think we ever will. Some amount of de-risking, if you can call that de-risking, is a starting point for us.

ED SALTZMAN: Kanad, the world looks a little bit different from the standpoint of a strategic investor. Still, you're deploying capital. At the end of the day, that capital will need an exit. How does this affect your calculation in terms of the right time to invest?

[small mix-up regarding whether Shobha or Kanad was to answer the question]

SHOBHA PARTHASARATHI: The way we invest, unlike what Mike said regarding doing the large rounds, is we tend to do smaller rounds and take it on a milestone-basis, so it's different in terms of how we invest. In that sense it's a little easier for us because we're not putting huge capital to work right away.

ED SALTZMAN: Kanad, coming back to the early-stage disruptive platform, how does this market condition factor into your consideration of those companies/opportunities?

KANAD DAS: When you like something, and you like the biology and you think about the amount of money and time that needs to go into a company, we think about it very similarly to the way Mike described. We like to build syndicates with people with deep pockets who understand the space who are technically diligent, and have the same view of what we do. Obviously the best result for us is that Boehringer Ingelheim buys every one of our portfolio companies, but we're realistic and we realize it's a very small percentage of our portfolio that will be purchased by BI, as has been the case historically. We've got many more M&As and IPOs than exits to our parent company. We think about it like almost any other VC would think about it: how much time and money to a realistic and meaningful value inflection point, and with whom can we work with so that our vision is one that the company and the

co-investors share. VC is VC. Just because we have a corporate backer, it doesn't really change the way we behave when we fund companies or how we behave on boards.

ED SALTZMAN: One of the challenges we see, that we see when our public clients get excited about releasing the latest piece of positive data, and darn it if the stock doesn't go down on the news. That's how brutal and difficult the market is right now. The more favorable data you present the more of a challenge it can be now. I'm probably exaggerating, but we've seen this kind of thing. So do you see any specific catalysts in terms of pivotal data or read outs that will resonate across the field and get us out of this? And I go to something that Mike said that this will be more like a gradual climb-out. Interestingly the data today is as good as the data when the market took off like rocket ships. The issue was there was covid and covid vaccines and the view of the industry that was pretty amazing, and that resonated with everybody. But now we're in a tougher situation. So do you see any near-term catalyst that get us out of this? Or do we just have to be patient and take our time? So Mike, you said we're in a pause. How long do think the pause lasts, and how will we climb out of it?

MIKE POWELL: *Biotech is too big and too important* for the pause to last many many years. If it lasts a year then great, it lasts a year. But if you said Mike, this is going to last 3 or 4 or 5 years [I'd be dubious]… I think that barring a bigger war… barring something catastrophic… I think that this is a pause and it's going to last a little while. You asked about catalysts and what are the kinds of things that can catalyze outcomes for companies. Clearly having a statistically valid data read-out like "we've unblinded our phase 2 and this is what the data looks like", you're correct, you get a tiny bump for great data, you get no bump for ok data, and if you have any kind of negative data (I don't mean major negative data, but you hit a *p* value of 0.04 – so it's still successful but it's not as big of a *p* value as you hoped for) you're right, your stock could actually go down. You get hugely penalized for neutral to negative data. That is something that's plagued us for a very long time. A lot of these data read-outs that we have in biotech, the reward for the read-out is not symmetric (if you get a good read-out your stock goes up 2X but a bad read-out it goes down by half). That almost never happens. It's 10% - 20% up on a good read-out and 80% down on a bad read-out. That's because a lot of belief as to what is the probability of that read-out is already built into your stock price for a public company. So we try to manage that as best we can. The best way to manage through that it to have a long list of catalysts and have your company be reporting something out every 3-6 months, if you can. Investors really do not like having "well my next data read-out is 18 months from now". There's nothing happening, there's nothing that's going to move your stock one way or the other. I've had many public company investors say to me, "I don't need to be in this stock right now. I can wait a year and invest a month or 2 months before the catalyst." So having this steady stream of important catalysts in your company is important, especially public companies but even for private ones as well.

ED SALTZMAN: Does the lack of M&A concern you? Pharma's swollen with cash. Pharma's pipeline is not bursting with innovation that's sufficient to get over today's hurdles. What do you think gets the M&A going? Let me go to Shobha on that one.

SHOBHA PARTHASARATHI: I think we temper our expectations to begin with. We got carried away with the last couple of years. This is a moment to recalibrate and be more realistic, but not necessarily doomsday. I don't think things have to change the world in order to be considered important. There's plenty of stuff that's happening. I'm very bullish about the future. In the place where I sit, I see so much happening across the board in technologies – it doesn't matter which aspect of life sciences you take… You cannot help but feel very optimistic about what's to come. Doesn't matter if it's devices or digital health or integration/multi-disciplinary or all of that. Given that, we are correcting for many reasons, some of which has nothing to do with the market itself. We're reacting to things that happened in the past, the geopolitical environment, etc. etc. But I don't see this as something that can really stop where we're headed in terms of the future.

ED SALTZMAN: I agree that the fundamentals are still fantastic and the level of de-risking of science has been amazing. But it's still not reflected in the M&A market. So why isn't pharma bargain-shopping right now with valuations being where they are? Kanad, what do you think of that?

KANAD DAS: A couple of comments: #1 Prior to joining the BI Venture Fund, I was in BD [at Merck]. You have to look at pharma as a 'full tray of drinks'. If you're a company trying to put a drink on their tray, they have to stop a program before they buy yours. A lot of people have left pharma to join these wonderful biotechs that, at one point, were valued extremely high (but may or may not be at this point). But understand they may not have the people or the will to take on risky things. So the best things I can say to companies is to raise enough money to be able to flip a statistically relevant data card such that people within that organization would look at it and say "this is the trial we would have brought; these are the questions we would have asked." So squeeze a lot of juice out of your trial. #2 There was a large delta between what some people were perceiving that the public markets would value them at, and what pharma would value them at during the 'go-go teens'. So being realistic your valuation might be a more prudent strategy if your board is directing you toward an M&A as opposed to a follow-on financing or another investment vehicle.

ED SALTZMAN: Mike do you want to have the last word on that?

MIKE POWELL: My 20-year record of M&A vs IPO is about a 1 to 2 ratio so twice as many IPOs as M&As. I've had M&As happen steadily over 20 years, and I don't see any real change. *The 'pharma machine' needs to be fed and we are the source of its food*. So I think it's going to keep going on.

ED SALTZMAN: This next set of questions have some level of broad applicability, but tends to be more relevant to the early-stage companies that are seeking their first significant capital. But remember we're prefacing all the questions for the rest of this panel with the context of 'in the current market'. A lot of these are classic pitch-camp questions. What is the best strategy for selecting a VC to approach? What's the best way to approach that VC? I'll start with Shobha on that one.

SHOBHA PARTHASARATHI: Rather than going to 50 VCs who are not relevant to you, do your research, find out who are the right VCs in your space, who have invested in your space. Then find someone who can introduce you to them. That way you're more likely to be successful if you go to 10 that you really

thought through who are active in your space and are investing right now, rather than 50-100 you didn't research carefully and getting rejected.

ED SALTZMAN: Kanad, what are the top 3 things that have to be in a slide deck if you want the VC to call you back with a positive intent of interest?

KANAD DAS: An understanding of how to differentiate your asset vs. the landscape. I'll say this over and over again: understand the landscape. Know where you're going to go and how you're going to be better. We like to think about it as an *unambiguous promotable advantage* or a universal selling point, or whatever construct you want to use: how are you going to be better/different within that space? Going back to landscape. Please understand who's ahead of you, when they're going to read out. Know how you're going to overcome the standard of care or what you're going to have to show in the clinic. Please take the time to cost that out with individuals who are really well-versed in the space. Next, have a team of people you can rely on as advisors or within your company who can do the work. We like to talk to academics a lot and build companies, but one of the most important things is, early on, identifying key personnel who can really think about how to get your company really attractive really quickly. Finally, be very open where the go/no-go criteria are. If you're not seeing the data you need to see, please understand that this is an experiment, and sometimes experiments need to have the plug pulled. Being open and realistic about that will get you a long way with folks like Shobha and Mike.

MIKE POWELL: I once made a *tongue-in-cheek* slide that said when you're sending a deck over to me, please don't include any data, don't tell me about any SABs that you've talked to, make sure that the font is too small for me to read, don't bother spell-checking, and you'll be just fine. [laughter] The list was much longer but it included all the wrong things I've seen people do. When you do those things it tells the venture person that "I don't care, I don't know enough about this space, you're one of 20 people I'm talking to, etc. etc." In reality, what you want to do is the exact opposite. You want to show the venture person that you know about their background, why this investment would be a perfect fit for their fund, that you are a master of this space, you've already recruited some of the strongest SAB members, and *data*. There's nothing that drives me crazier than getting a deck with almost no data. If there's one take-away, I can help people with out there, it's share your data. Of course, file your IP first and everything else, but there's an absolute correlation: the less data you show me… the more guarded you are in showing the data… the less interested I'm going to be. The entrepreneurs that I *love* working with are the ones who are like, "Mike, here's everything. Here's everything I've done, what do you think?" Be open and show lots of data.

ED SALTZMAN: I'll go to Shobha. Shobha are you not overly impressed by companies that come in and tell you that they're targeting a market worth several billion dollars? [laughter]

SHOBHA PARTHASARATHI: At the stage which we invest we have very little to go by other than the science and the people. If we like the science and we think we can work with the people, that's good. But in real estate they say it's location, location, location. And like Mike said, for us, it's data, data, data.

ED SALTZMAN: So to your point, what should companies lead with? How much emphasis in a short pitch should they put on the team vs. the science. I hear Mike, it's the data, and I assume you agree. But how much discussion of the team, the market (hopefully in a more sophisticated way than saying it's worth billions)… how much do you want to see there?

SHOBHA PARTHASARATHI: Remember, we work with first-time entrepreneurs; we work with *partial* teams. And we're ok with that because that's part of our role that we take very seriously as an accelerator. If you have just entrepreneur and one other person running the company, that's good enough for us. We will get you ready when the time is right, and that could be at the time of series A. We have a ton of acquisition folks on our team who can make sure that the company's team is filled out, have the right C-suite, the right board members, etc. But right at the get-go, even when you're talking about pre-seed and seed, we don't really care if you have that big team or not. We are trying to make sure that your science is something that can be validated, and get you to a point where you will look attractive for a series A.

ED SALTZMAN: When is a pitch/pitch deck too long? So Mike, if it's filled with data, lots and lots of data, all the data you want, but the pitch just goes on and on, do you lose interest? We're all busy.

MIKE POWELL: Yup, you're right. Tight deck, 20 slides, 30 slides at the most. A very effective tool for getting your data out there but having a tight deck is to put a lot of it in the appendix. It's ok to say something like "These are the key data points that show the effect in primates. The rest of the data is there in the back of the deck - it's there if you need it." That kind of thing works very very well.

ED SALTZMAN: Mike you started with something that was very amusing: the opposite of everything you're supposed to do. What are the biggest turnoffs during pitches… what should be completely avoided? Anything that just sends you saying "Next!"? Kanad?

KANAD DAS: This is a personal pet peeve of mine, but the notion that just because it exists it should be developed. Please take the time to justify why running an experiment in human beings is valid. Please think about the moral obligation that we take on when we run experiments. Also, and this isn't always possible – it's indication-specific – take the time to think through what we can measure pre-clinically and tie that to what we can measure clinically. Many times we'll see pathology data we can get pre and post-treatment. Or maybe, once or twice during the course of treatment, as your major justification, if you can try to correlate what you're measuring to a blood-borne biomarker, that's really in your best interest. I really like to see a straight line between what was measured pre-clinically and what was measured clinically. I don't want to speak for anyone else but it really goes a long way with me.

ED SALTZMAN: Shobha, what gets you headed to the exits vs. what gets you headed to the next meeting?

SHOBHA PARTHASARATHI: Well, to talk about the market being billions without having any data to show for it. This is a tough business. It takes a lot of work to get to where you need to go. And a little bit of

humility and being responsive goes a long way. I want to see people who are genuinely interested in seeing the drug get to the patient who also have some humility in them… while being realistic.

-- LIVE Q&A –

QUESTION: What is the funding in the IPO market for US vs. China for the remainder of 2022? Are you investing in China, what's you outlook for that?

MIKE POWELL: There are some terrific venture groups that focus on China. When I was at Sofinnova years ago we had a China investment strategy to figure out if we could credibly compete with the best of the VCs that are already doing it. We came to the conclusion that that's a very different space, geography, role set, and so I would leave that to the experts who are already doing that today. If you're interested in China play, seek out Vivo Ventures and a number of other great groups that are known to be in that space.

QUESTION: Have you seen an impact on innovation during Covid or during this recent environment?

ED SALTZMAN: Impact has been on clinical trials. I don't think it's just Covid. A lot of trials are done in Eastern Europe, so the instability in the region has been a blow to many companies.

SHOBHA PARTHASARATHI: In addition to the clinical trial issues, even getting work done with CROs, due to supply chain-related issues, because of Covid, even at the preclinical stage… trying to get studies done… the queue is a lot longer.

KANAD DAS: The standard timelines for getting preclinical studies done, manufacturing done, should be elongated. Please talk to your friends in the industry, figure out how long it's taking them to get things done. Build that into your budgets – a lot of our portfolio is delayed due to some of these issues.

QUESTION: What about the issue of drug pricing? The high drug prices that have excited investors are arguably not sustainable. Does the market know policy changes are coming? Perhaps there's a secular change in perception, not a pause.

MIKE POWELL: There is no other industry on the planet where something is expensive the first 8 years it comes out and then drops to 5 cents on the dollar. Imagine if brand new BMWs sold for $80,000 for the first 8 years and then BMW had to sell then for $800 forever after. So there is no easy answer to this, it's probably a whole session where we could talk about why costs are high… the millions of dollars it costs to develop drugs. How do you help pharmas and biotechs have the funds to develop the drugs by selling them, but at the same time take care of patients long term? I personally think the value of the drug isn't in the first 8 years where it's licensed and expensive. I think there's a lot of societal value out of drugs long after (for 20 – 30 years) they've come off patent and are very inexpensive.

ED SALTZMAN: I mostly agree with that. The asterisk on that is a lot of today's innovation – in fact the innovation of the last 20 years – has taken the form of products that are very challenging to commoditize. And that continues. So I fully agree with your observation. But the challenge in that is clear: it's taken biosimilars, especially in the US, a long time to get going. It's not a low-cost-of-entry business, competition does not come in the way it does with small molecules. The issue of pricing has to be understood within the issue of access. Where the industry gets clobbered is not so much the issue of pricing, but on the issue of exposure to patients and out-of-pocket costs. It's a problem that the industry will need to address.

QUESTION: Please address your view on investing in asset spin-offs. Not only spin-offs from big pharma, but also tech transfer and accelerators.

MIKE POWELL: Spin-offs are a great business model. Any time you can start a company by getting a phase 1 or phase 2 asset, 70 kg of a GMP-manufactured drug, and a team that knows what they're doing, it's a great way to start a company. That said they're tricky to spin off. You're telling a pharma we want your program for next to nothing but oh, by the way, it's going to be a billion-dollar market, and those two Venn circles don't always overlap in terms of messaging. If you can do spin-offs, and if the entrepreneurs out there listening to this can get associated with spin-offs, I think they're one of the fastest ways to create value in a newly emerging biotech company.

QUESTION: What do you think about SPACs?

[general laughter]

SHOBHA PARTHASARATHI: I think everyone knows the answer to that

ED SALTZMAN: We told you so

[general laughter]

MIKE POWELL: Jump to the next question

QUESTION: What do you think of the current market and valuations on earlier-stage companies?

ED SALTZMAN: Early stage cos have been robustly valued, and they have a problem structurally with respect to public markets and milestones and generation of data. That's a systemic problem. But some early stage companies are later than they look because of the indications they're pursuing and they've got accelerated approval and will move from phase 1 to approval very quickly, so not every early stage company is early stage.

-- OFFLINE Q&A --

QUESTION: Please address the balance between follow-on investing in existing portfolio companies vs. de novo investments in new portfolio opportunities.

MIKE POWELL: Most funds do a ‘reserves analysis’ at the time of the initial investment, ie, when the initial investment is made, the follow on reserves for this investment are also calculated and set aside for later rounds. Typically for a Series A investment, at least an additional $1-2 for every $1 in the Series A gets set aside; for later rounds obviously the reserves can be less.

QUESTION: Will investors be looking to invest in several companies in smaller amounts per companies to mitigate risk in this market?   Or will investors seek to do fewer investments with slightly higher amounts?

SHOBHA PARTHASARATHI: There are a variety of investors out there and you will find both types in this environment. Find the right investor for you and don’t try to force fit your needs into an investor’s investment thesis.

QUESTION: Irrespective of the product, what gets you over the line in terms of the structure of the board of directors?

MIKE POWELL: Typically a 5 or 7 person board is ideal, smaller than that and not enough smart heads around the table; larger than that and it is a challenge to manage

QUESTION: If a company has strong clinical data -"sweet fruit" but does not have strong management, how much emphasis do you put on the TEAM? How important is leadership skills of company important in assessing investment?

KANAD DAS: The team is the execution vehicle, the short answer is that it matters. The more nuanced answer lies in how you define strong management. Can an exec chair or experienced people be added to augment the skill sets? If the clinical data is truly strong, the company will surely attract experienced people.

QUESTION: What therapy areas and modalities are investors interested in? Is it still a large molecule and oncology world? What areas of oncology are you most excited about? What modalities?

MIKE POWELL: Almost 30-50% of venture investments are in oncology, based on our portfolios, both small molecule, and proteins. Great space to invest in, although hugely competitive as well.

SHOBHA PARTHASARATHI: For the most part, we are excited by any modality as long as the approach is differentiated and the data is too, irrespective of the modality or indication.

QUESTION: If my biotech company stock is down 50% - do pharma people expect a similar discount on the licensing if we talk?

SHOBHA PARTHASARATHI: The inherent value should not change significantly if the fundamentals are solid and the discount will depend on extent of desperation and negotiation

QUESTION: For Oncology specifically, how do you see the FDA's Project Optimus affecting early biotechs?

SHOBHA PARTHASARATHI: From an investors perspective, early and frequent interactions with the FDA are encouraged, and the additional dose ranging and trial optimization needs to be built into the budget.

QUESTION: Should companies with longer timelines to meaningful news-flow look to expand/fill their pipeline with assets through M&As to increase near term news flow? In the eyes of investors, is this 'inorganic growth' an attractive model to increase company value?

KANAD DAS: I always advocate for more shots on goal if there's adequate resources in the company

SHOBHA PARTHASARATHI: It really depends on the stage of the company, funds raised to date and the balance between going deep and staying focused versus going wide and using up valuable resources especially if you are a young startup. In the end, it should make sense but not for the purpose of near-term news flow unless it's a way to quick sale of company and assets. Having said that, being more than a one-trick pony definitely is preferred.

QUESTION: How do VCs view Angel funding in early stage (pre-seed/seed) companies? Are they an asset or a hindrance to their investment?

MIKE POWELL: Some 'pre-seed/seed' investing is ok in a venture portfolio, especially if a small ($1-3M?) investment amount can reduce some sort of technical risk early on. Too many early investments is a challenge, these are a lot of work! And the risk is high, and not much $$ is being put to work. But some is OK.

KANAD DAS: Please keep in mind that a seed is as much (sometimes more) work than a Series A or B for the investor.

QUESTION: When considering preclinical opportunities, specifically in small molecules, what data or milestones carry the most weight? What are the critical de-risking events should be present to consider the opportunity?

MIKE POWELL: Great question. The best de-risking in a pre-clinical setting is POC in animal models (that are known to mimic human efficacy). Clearly this itself is a challenge, ie, tumor reduction in mice is not sufficient to guarantee efficacy in the clinic.

QUESTION: Do you think that foundations, that are guided by senior scientists that are biased toward their own theories of disease, are slowing innovation? These may be the same senior scientists that are guiding the VCs, so shutting down new ideas across the board.

MIKE POWELL: No, I think the opposite. Critical thinking comes from all different avenues, and some of the foundation scientists I know are super smart. Yes, they are opinionated too, believe in their models, but it’s usually because of their domain knowledge.

QUESTION: Which stage of innovation and product life cycle would be best for investment in bear market?

MIKE POWELL: During a bear market, later stage is usually better. There is usually a ‘flight to quality’ in a bear market, and nothing says quality like good, late-stage clinical data.

QUESTION: How do you see the overvaluation of companies out of Boston/Silicon Valley playing into your portfolios in trying to find startups out of flyover country / midwest? Seems like a lot of these failures are coming from taking shots on the coasts, but access to capital is a struggle for companies in the midwest. How do companies like us standout against the “boston based” or silicon valley companies? Especially given that you all are early stage investors.

SHOBHA PARTHASARATHI: We invest everywhere and actively look at the Midwest based companies. We just don’t take shots, we evaluate all companies with the same lens. With us, you have the same chance of being funded as Boston or Silicon Valley startup. Just reach out on LinkedIn or on our website

QUESTION: What are your expert views on disruptive technologies that bring value to preclinical aspects using preclinical patient-derived 3D cell models to help accelerate towards clinical data?

SHOBHA PARTHASARATHI: Any effort that helps to identify and stratify patient populations to allow for better prediction of efficacy in clinical trials is generally viewed positively by us. Boils down to extent of validation and level of confidence.

QUESTION: Do you view companies seeking series B as start-ups?

MIKE POWELL: Usually not. Start-ups generally refers to the earliest stage of company growth, and most companies by Series B are already on their way to becoming established biotechs. Of course, if the seed or Series A was only $1-5M, then the Series B company could still be a 'start-up', but most venture backed Series A rounds nowadays are significantly larger than that.

QUESTION: So what about companies that were privately funded through seed and series A - and now want to look for that next series to help grow post-pandemic - what advise do you have for them?

KANAD DAS**:** I think it's important to have a clinical strategy that differentiates/measures your mechanism of action early.

QUESTION: What about comps with phase 2a clinical data seeking for significant investment to moving its clinical candidate through late-stage clinical development to commercialization. What are the options? Any advise?

SHOBHA PARTHASARATHI: It depends on your development and exit strategy, funds raised to date and sources and valuation expectations

QUESTION: Is any VC willing to do double-blind test for due diligence

MIKE POWELL: I am intrigued by the question, but it may be because I don't fully understand it! VC DD is just that, work product by the VCs and their consultants to try and get confidence in a company, to the point of investing $$M. Not all DD is perfect, and some might even say in the eye of the beholder, ie, one VC may make their investment decision on the team, and others on the IP or clinical data. Not everyone's DD is going to have the same focus.

QUESTION: Maybe I'm straying a bit from the focus of the debate... The current economic environment, especially in Europe due to the war situation near our borders, has the main focus on the development of green energies. This will have a significant impact on the health of our planet and therefore on the health of people, and all of this really falls under the One Health concept. I have two questions on this 1- How widespread is this concept among investors, to manage the interconnection of the markets of the different sectors? 2- What percentage of traction does the market for the development of renewable energies have over the market for biotechnology to improve people's health?

SHOBHA PARTHASARATHI: I would say very little to not at all to manage interconnection of the markets of different sectors.

QUESTION: Any tips specific to a company in stealth mode?

MIKE POWELL: Yep. Figure out why you are in stealth mode first. Is it because you're still filing IP? Worried about a particular competitor? Collecting enough preclinical data to burst forth with a fabulous story to raise real $? Most companies I see in stealth mode don't really need to be there IMO.

QUESTION: It more and more turns out that cancer diagnostics are crucial for cancer therapy in particular to select the best therapy for this particular patient or for the next drug candidate (personalized stratification) and to detect dynamic adjustments of the cancer (e.g., resistances) to (again) select the best available therapy. This is very different from other diagnostic assays! Question: Why are there not more investments in cancer diagnostics??

MIKE POWELL: I think we will see more onc drugs tied to diagnostic markers, and more and more companies will be developing both simultaneously. Big job, but someone has to do it. That said, with the right biomarker strategy, ie, being able to tell up front which patients will respond in a clinical trial makes the trial much smaller, less expensive, and faster. All good.

QUESTION: Please discuss specifically investing in -- (1) natural product discovery (2) materials derived from food processing waste

SHOBHA PARTHASARATHI: We are primarily biotech/life Sciences/Pharma investors so unless the application is in those areas, it would be out of scope for us.

QUESTION: Please talk to small private biotech in the current environment and their ability to raise capital with VCs… Are VCs being more cautious this year? What is the private biotech effect from the current low biotech stock values?

SHOBHA PARTHASARATHI: At your stage of development, VC investing is still active

QUESTION: How to tackle difficulties associated with Funding of university projects in developed and developing countries

SHOBHA PARTHASARATHI: This may be generalizing but on the fundraising side, you may have raise money from friends and family, individual angels and angel networks, disease foundations, federal and state grants to get your proof of concept or validation done before going to VCs.

Would recommend getting early data developed at a university confirmed at a CRO.

If research is continuing at the university to make sure its up to industry standards with regards to use of agents, consideration of statistics, record keeping etc.

Bring in industry expertise and guidance early in the program to develop strategy and give feedback to change course whether indication or animal models, right choice of libraries etc.

Make sure IP is filed, and the tech transfer office and the PI are engaged early and often.

Market and competition landscape to get a handle on timeline to value creation

Review track record and personality of team

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MACKENSIE VERNETTI (Director of Partnering at BIO): A sincere thanks to our panelists, Mike Powell of Omega Funds, Kanad Das of Boehringer Ingelheim's Venture Fund and Shobha Parthasrathi of Xontogeny, our moderator Ed Saltzman of Lumanity, and our sponsor, Mike Liccardo of ShareVault. We will keep you updated on more BIO One-on-One Partnering webinars. See you at BIO 2022!