**Speaker:** The *BioWorld Insider Podcast*.

**Lynn Yoffee:** This is the *BioWorld Insider Podcast*, and I'm Lynn Yoffee, BioWorld's publisher. It's been another record year for biopharma fundraising. There is more money than ever coursing through the industry. A comparison of the first 10 months of every year going back to 2000 indicates that the volume and value of IPOs and of venture capital financings are at their highest levels so far in 2021.

Private financings for '21 have easily outdistanced those from 2020, which also was a record year. A lot of it has been powered by SPACs, the newly popular Special Purpose Acquisition Companies. Where is it all going in 2022? Today, BioWorld's Staff Writer, Lee Landenberger, is talking with two biopharma serial entrepreneurs who will share their perspectives on financing trends.

First, we welcome Kleanthis Xanthopoulos, who is the co-founder, chairman, and CEO of Shoreline Biosciences. For more than 20 years, he's been an executive, company founder, CEO, investor, and board member in biopharma research. He's founded five companies, shepherded three life sciences companies under NASDAQ, and financed and brokered numerous large deals.

We also welcome Joe Hernandez, who has been CEO and executive chairman of Blue Water Vaccines since 2018. That company is focused on manufacturing a universal flu vaccine. He founded or led eight healthcare and pharmaceutical companies. Mr. Hernandez is currently chairman and CEO of Bluewater Acquisition, a SPAC that completed an IPO a year ago this month. In September, the acquisition corporation combined with Clarus Therapeutics. Welcome, both of you. Lee, over to you.

**Lee Landenberger:** Thanks, Lynn. I'm lucky enough to be sitting with two gentlemen who understand biopharma financing. They've been deeply involved in it for years. They've seen a lot. They have a lot of perspective about why and how the business and the science develop as they do. Joe, I wanted to start with you on my first question. The Founder and Managing Director of EcoR1 Capital, Oleg Nodelman, was speaking recently.

He said, "There's money to be made at least today, and as long as there's money to be made, people are going to chase it right off a cliff." I think that's probably an overly pessimistic view, but sometimes it all seems too good to be true. Do you think that this white-hot pace that we're on now can remain the same in 2022, Joe? That one's for you.

**Joe Hernandez:** First of all, I know Oleg well, and I think he's a poet. We got to take all comments with a grain of salt, and I think the market is certainly frothy. I think everyone would agree that there is some overzealousness in the market, and it's a matter of ensuring that we don't lose our skis. The reality is there's still a lot of value in the sector, and there's a lot of great companies.

If COVID hasn't taught us anything, it is that investments in biotechs, not only do they pay off financially, but they also have a great, significant, positive impact on the world. I think there's going to be some stabilization, but where else are you going to put your money? I think biotech is probably one of the better places to put capital to work.

**Lee:** Kleanthis, do you have some thoughts about that?

**Kleanthis Xanthopoulos:** Yes, I always respect what Oleg says. I've known him for over 20 years. I agree with Joe. Frankly, we have seen already a significant correction. In fact, the correction started already in the spring of this year. What we're experiencing now is a very significant depression of XBI that my best measure to see where biotech is going could include a lot of smaller companies.

What you're seeing is a lot of sell-off. People speculate it's for tax purposes, but the reality is most of the funds are either flat or have lost 10%, 20% of their value. That correction I don't see any change until the end of the year, but there is a lot of money in the system. I think people are going to have a very fresh look in 2022, and I can only imagine things are going to get better.

**Lee:** I have a question about financing and the boom in financing. I realize it's probably not all COVID-driven, but a pretty significant chunk of it seems to be. Can either of you or both give me an idea of how much of it is COVID-driven?

**Joe:** I would argue that there is some attention that has been drawn to biotech as it relates to COVID. I think people that were probably in other industries and didn't really talk much about biotech as an investment piece probably now look at biotech as an option because of, again, the successes around COVID and the impact it's had on humanity and really on the recovery of the pandemic.

**Kleanthis:** I think there is a structural significant difference between biotech and the capital supporting biotech today as it was 10 years ago. It's primarily because a lot more money has come to the system in the hands of experienced professionals that invest systematically and can look at opportunities, both for the short and the long-term. We did have, obviously, a spike with COVID, as Joe said, certain industries, entertainment, travel, energy, and others were severely depressed, so generalists came into the sector.

That's why we saw a spike and a pick somewhere in 2020. There is now a recalibration, but the overall money in the biotech sector in the hands of very significant and experienced professionals is in order of magnitude higher than it was a couple of decades ago.

**Lee:** I want to ask you also about SPACs. They're incredibly popular right now. Is the landscape set so that that will continue into 2022?

**Joe:** I would say from our experience, we think that there's more resistance from a numbers and a structure perspective and a sequence perspective. What I mean by that is there's been guidance by the agency on how to treat some of the warrants that are typically assigned to sponsors, and that's had an impact in the velocity of SPACs. I think the other dynamic that's really had an impact is really the percentage of the amount of redemption that occurs or has occurred on some of the more recently announced transactions.

I think because then that drives the transaction to go to the pipe market and those markets are sometimes unpredictable, I think those two dynamics have slowed the process down, but I'm an advocate for SPACs. I believe they're great vehicles. I think they're investor-friendly vehicles, and it's the reason we're out in the market with our second SPAC. They're here to stay, and they're a great vehicle for biotech companies looking to go and get public.

**Lee:** I'm curious, why is their time now? Why are SPACs becoming so popular now?

**Joe:** I would say that it has to do with the acceptance of SPACs in the broader market by sophisticated investors in large funds that traditionally did not invest in these vehicles. There's always been players in the SPAC world, and there are investors that are primarily focused on SPACs, but I think the broad acceptance by broad investors and large institutional investors has really driven the popularity of SPACs in general.

**Kleanthis:** I would agree with that. SPACs have been around for a long time, but we saw a very significant peak a couple of three years ago. Looking forward, for the reasons Joe outlined, some of them are structural, some of them is a little bit of investor fatigue. We're going to see that plateau, but they're here to stay, and we're going to see a quantitatively less number of SPACs but hopefully, qualitatively better SPACs and better transactions because the key is the SPAC'ing process, the process by which a SPAC identifies a target and then funnels the capital to that particular target. They're here to stay, but we're going to see them, in my view, in less volume, as we experienced in the last year or so.

**Joe:** Totally agree.

**Lee:** In Asia, it's been slower in their acceptance and the Hong Kong markets looking to tap into it, and they've changed some of the rules that they use. Any thoughts about SPACs and a trend in 2022 in Asia?

**Joe:** I don't have a lot of experience in the capital markets in Asia. What I have seen is a certainly greater appetite by Asian investors in the US markets. I think you'll continue to see that trend. I have and I can't say that I've seen a lot of IPOs in Hong Kong that perform well. I think the American markets are really where the focal investors are, both domestically and abroad. I think that'll continue to be the case for the foreseeable future.

**Kleanthis:** The firm that I'm associated with, Stork Capital, is following the developments in Hong Kong and also looking at the potential for SPACs there. We're taking a cautious look, it's not very clear what, A, the regulations are going to be and, B, the appetite of investors. I think that's going to play out in 2022.

**Lee:** Moving on from SPACs into IPOs, also having exceptionally strong years, this past year and the year before, are the market fundamentals that power those surges baked into the cake for 2022 also?

**Joe:** The market has seen a lot of smaller IPOs than traditionally we have seen, and I think those companies are going to continue to need capital, and how that plays out long-term is anyone's guess, but I would say that there's going to be some stabilization to the public markets on biotech, for sure.

**Kleanthis:** In our view, we saw, in 2022, and despite the correction that I mentioned earlier, 75, 80 IPOs, which is close to the record, and we've seen a bullish IPO market for the past four or five years, which has continued uninterrupted. I don't see a reason why '22 is going to be different. The only potential filter I will introduce is better-quality companies because given what has happened in the second half of 2021, I think you're going to see funds being much more selective in terms of where they invest their capital.

**Lee:** That's what I wanted to ask you about next, the indications and the kinds of science that are trending and that are looking to be good investments for 2022. Do you see any trends coming up for next year?

**Kleanthis:** Over 40% of our companies are focusing on oncology. Obviously, with the pandemic still raging, we're going to see vaccines and antiviral company focus. Beyond that, specifically, in terms of technology, cell therapies and gene therapies will continue that momentum because they've been demonstrating significant clinical results and promise to change, fundamentally, the way we treat diseases.

**Joe:** I totally agree with those sectors. I would add also the neurology or CNS side of the equation, I think you're seeing a lot of momentum there with companies that really have transformative strategies and molecules that I think are much needed in the market. Beyond the vaccines and the oncology, I think neurology and CNS-based diseases, including Alzheimer's, will continue to be a big factor. I think there are some exciting technologies there that could be transformative.

**Lee:** Do mRNAs factor into that at all, still look strong?

**Joe:** I know mRNAs really well. We actually tried to bring a company public about eight years ago, using micro RNAs. From a vaccine perspective, if COVID has done anything for technology, it's that it's accelerated the adoption of mRNA approaches and vaccines, and you're seeing the Big Pharmas adopting and advancing their programs and mRNA-based vaccines. I think you'll see that trend continue.

On the therapeutic side, that's less likely, in my humble opinion. A vaccine is a very different regimen. You give somebody one or two or three shots, and that's the exposure that they have to-- the delivery vehicles that are often used in mRNA, which are lipid nanoparticles. For chronic diseases where you have to give a therapy for a prolonged period of time, toxicity is still out there, and I think the regulators are going to be hesitant for chronic-based diseases. I think vaccines, for sure.

**Kleanthis:** I agree with Joe. Given that I have a decade of exposure in RNA therapeutics, once you know the technical difficulties of potential immunogenicity, if you're going to multi-dose a patient and other delivery issues to specific pieces of interest, it will become more of a research program to try to get outside of the vaccines. Let's not forget that Moderna did start with a very big vision to address multiple different diseases, and that was not very successful for a long time until vaccines, of course, validated their platform.

Equally important, let's also not forget that there's three decades of systematically building the tools to develop RNA therapeutics, how we deliver them, how we modify the nucleic acids to stay longer in the body and bring the effect, it's all this immense amount of work that helped the messenger RNA vaccines of today.

**Lee:** Let me ask you a counter-intuitive perspective from down the road. Do you see anything that may be a big factor coming up in 2022 that's not a current trend?

**Joe:** From a technology perspective, again, I think the neurology angle is one that I think there's a lot of novel approaches there. I think from a macroeconomic perspective, how the paying system, reimbursement, and the potential buying power that government could have and the impact that may have on pricing, I think those macroeconomic things are things that investors are going to pay attention to because that ultimately has an impact on the overall investor appetite for our sector.

I think that is one that I would pay attention to. Certainly, there are some other exciting technologies coming out of Europe that I think now we're seeing a lot more exposure. Of course, China, as a country, has become more creative in novel approaches. I think we should look to Asia for new technologies as well, moving forward.

**Kleanthis:** From my perspective, the correction we experienced in the second half of this year brought down valuations of companies that now potentially become attractive to big pharma for M&A. I think you're going to see M&A picking up, which was relatively quiet in 2021. That's, obviously, one of the key factors that fuels the growth of biotech and the appetite of investors to continue to invest in the sector.

The second is something that was not predicted where companies like Pfizer, all of a sudden, because of vaccines and potentially now therapeutics against COVID, have tens of billions of dollars that was not forecasted or budgeted, and that money is going to be put to work. How Pfizer and others choose to do that, it's, of course, their business, but undoubtedly, part of that will come to fuel biotech.

I think those two macro factors, including the start of the year and the amount of capital that a lot of hedge funds and mutual funds have for us dedicated to biotech, is going to fuel 2022 growth.

**Lee:** Yes, Pfizer's got some money on hand.

**Joe:** Yes, these are great points. It should not be overlooked. I completely, totally agree.

**Lee:** Well, thank you both. I feel a lot better looking ahead to 2022 and feel like I've gotten a better handle on everything. Thanks for your time and your insight.

**Joe:** Thank you for the opportunity.

**Kleanthis:** Thank you, guys.

**Joe:** Our pleasure. Lynn.

**Lynn:** It's a fascinating discussion. BioWorld tracks the financings in the biopharmaceutical sector constantly, and we're constantly reanalyzing as things change because, of course, without the money, how would we bring these great scientific inventions forward? As always, BioWorld will continue to keep you informed of all the most important scientific, clinical, and business updates in the field.

That's our show for today. If you need to track the development of drugs, turn to BioWorld.com. Follow us on Twitter or email us at newsdesk@BioWorld.com. Also, if you're enjoying the podcast, don't forget to subscribe. Thanks for joining us.

**Speaker:** BioWorld, published by Clarivate, is a subscription-based news service, but all of our COVID-19 content, more than 5,000 articles, and data entries since the start of the pandemic are freely accessible.

**[00:18:39] [END OF AUDIO]**