

## Praduman Jain

**Narrator:** You're listening to *BioTalk* with Rich Bendis, the only podcast focused on the BioHealth Capital Region. Each episode, we'll talk to leaders in the industry to break down the biggest topics happening today in BioHealth.

**Rich Bendis:** Hi. This is Rich Bendis, your host for *BioTalk*. And as you know, we talk to different BioHealth leaders within the BioHealth Capital Region of Maryland, D.C., and Virginia, and other places in the U.S. and internationally. And we have a little different profile today. Something that we think the listeners are going to enjoy very much because we've had a lot of therapeutic, diagnostic, and vaccine companies that we've interviewed, especially with what's going on with COVID-19, recently. But we thought it would be neat to get into part of the roots of our region. And if you look at how this region got on the map originally, it was really AOL and some other technology companies. But we really haven't focused as much on technology and software companies.

0:01:03 We're gonna change that dynamic today because we have Praduman Jain, better known as PJ, who's the CEO and Founder of Vibrent Health in Northern Virginia, who's gonna be our guest today. So, welcome to *BioTalk*, PJ.

**Praduman Jain:** Good afternoon, Rich. And I'm incredibly excited to be here. Thank you for inviting me to share some talks and our experiences with the community. And I want to thank again, BioHealth Innovation to host this event.

**Rich Bendis:** Well, thank you. And I know that people are gonna get a little better knowledge of you personally as well as the company. But you've been in the press a lot. And we're gonna talk about that later. But I think the listeners would first be very interested, PJ, in what your professional background is and how you started and how you ended up actually founding Vibrent Health.

**Praduman Jain:** Well, it's been a great journey, consistent with being an entrepreneur. The ups and downs that have occurred along the way.

0:02:02 So, my background and my training in education is I'm an engineer with bachelor's and master's degrees in electrical engineering and computer science. And my professional background was working 25+ years in

technology, media, and telecom. So, you mentioned AOL. I was there. I worked for AOL, Time Warner, Sprint, and VTech. So, understanding telecom, media, and consumer electronics, consumer apps, is what I used to do. And then in 2010, I founded Vibrent Health. And it was an interesting time. Because that's when our country was going through major healthcare transformation and the Affordable Care Act and everybody talking about using technology. And using technology to help consumers and everybody, every individual be able to do, to able to understand their health and improve their health.

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And I did a lot of market research and it was clear that platforms and products were missing to be able to achieve that. Using technology. So, using mobile apps. Using wearable devices, and doing a lot of data collection based on big data. The concept of big data in machine learning. So, all of those areas were emerging and I felt there was a real need. So, like many entrepreneurs have done, I invested my 401K money and started a company. We did not raise any capital of any kind. It was self-funded. And we took that through many years of validations and technology validation, market validation, building the platform.

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Along the way, we also encountered small business innovation research, SBIR grants. And Rich, you probably know the story of, maybe I've told you this before. I think I met Robert Brooks many, many years ago and he said, "PJ, do you know there is something called non-dilutive funding using SBIRs?" And I said, "What is that?"

**Rich Bendis:**

[laugh]

**Praduman Jain:**

And he said, "You need to take my course. And learn about it." So, we went to Robert Brooks' couple of classes. We learned about how to write a grant and we were fortunate that we wrote six grants and we won almost \$7 million in funding from SBIRs.

**Rich Bendis:**

Congratulations. That's a great lesson for all of the entrepreneurs listening that have not tried that yet.

**Praduman Jain:**

Thank you, Rich. It was an incredibly rewarding experience. And as you know, these SBIR government grants are designed to provide this capital to entrepreneurs to build great, new technologies and R&D.

0:05:04 That can then lead to other sources of follow-on funding. And that's exactly what happened to us is that when we built the platform using the SBIR funding, we also along the way built great intellectual property through patents and copyrighted software. Proprietary software. And that's what led to the next phase of the company. And that happened in 2017 when we won the NIH All of Us Research Program funding. Large funding. Which at the time was \$75 million to build a digital health platform for health research.

**Rich Bendis:** That was an extremely important program nationally and within NIH. And for those people who don't know about All of Us, would you like to explain a little bit about that program, PJ?

0:06:02 Yeah. This is a highly innovative program and with a lot of vision. And tremendous credit goes to Dr. Francis Collins, who's the Director of NIH. And also, to the previous President, who started the Precision Medicine Initiative. And also goes to our government officials and congressmen and senators who funded the program with \$3 billion dollars of funding. And with full bipartisan support, to create new methods and new technologies that could then enable researchers to find new cures and new discoveries to improve health of all of us. So, the program was very nicely labeled as the All of Us Program because it truly involves and allows all of us to participate in health research.

0:07:02 And it is based on principles of inclusion, diversity, as well as underrepresentation that we need to increase representation of populations in health research, which has really significant program to change how we conduct health research and how drugs, therapies, vaccines, can benefit the future of medicine. Can benefit from inclusion of diverse and underrepresented populations. If we include more and more, we will have high relevance for drugs, therapies, and vaccines that we create in the future.

**Rich Bendis:** And if I'm not mistaken, you're actually creating the backbone for the data collection for the All of Us Program. Which I thought originally the original goal was to get data from about a million people in the United States.

0:08:04 Is that true?

**Praduman Jain:** Yes, Rich. Thank you for pointing that out. The goal was a million people. We are about 430,000 people in that journey. And still moving towards a goal of a million. So, the role of Vibrent Health is to be the central platform, including the backbone as well as the front facing mobile apps and portals for these million people. For data collection of their genomics, genetics data, mobile apps data, wearable data, survey data. Everything related to their genomics, environment, lifestyle behaviors, and clinical data. So, clinical data that would come from their electronic health record. And Rich, you can associate with this.

0:09:00 That if you had all of this data about yourself in one place, how can that help you with insights about your own health? How can that help you make decisions about your health because now you know your genetic makeup, the environment you live in, whether your air quality, your behaviors, your lifestyle, how well you are sleeping, what medications you are taking, how you are eating, and then your electronic health record history that says what are the events you had? Episodes that occurred. And to bring that data together that you can have in one place. Which hasn't been possible so far. So, this is a groundbreaking platform that we are working with the NIH to build. And to bring the benefit of that to broad populations.

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**Rich Bendis:** And what it sounds like it's a much more comprehensive than a lot of the DNA testing that you hear. Like a 23andMe that's out there, which would only be a small component of the data that you're capturing on each of the individual patients or citizens that's gonna be in this database.

**Praduman Jain:** This is a fantastic point in the distinction that we talk about, Rich. That any genetic testing, at the end of the day, it is very valuable. Because it tells you about where you came from in the history of humanity. However, it's really rearview mirror that's already occurred. So, genetic test is fantastic. It gives you information. But it primarily focuses on ancestry and traits. And it's gonna give you some medically actionable gene information that might point to some risk factors. But that in itself is not enough.

0:11:00 Like knowing that any one of us have a heritage coming from Europe or Asia or Pacific Island. That's good to know. But it doesn't really help me

day-to-day. To make choices and decisions about my health. So, that's a great point, Rich. That our approach is to be more comprehensive and more predictive. You have to be able to help people with what they should do, not only what occurred in the past.

**Rich Bendis:** And with this contract you have with NIH, which is extensive, will they have exclusive rights to everything that you're developing related to the All of Us platform and backbone? Or are there other things that you might be able to commercialize as a result that you're doing with the NIH?

**Praduman Jain:** What NIH has full rights to are the data. What they care about is data that's generated. But when it comes to software technology platforms, they fully expect that these in this investment that's being made really benefits the broader agenda of health research.

0:12:14 The mission of NIH is to be an enabler. Just like go back to the example you used around genomics. Twenty four years ago Dr. Francis Collins, he led the initial funding for the genetic testing and genomics project. And I have seen some slides. I wasn't there. But I've seen some slides that say it was a one, big room of computer and costed \$400,000 to do genome sequencing. So, that is the early technology development that NIH and Dr. Collins invested in. And look at the economic value that it provided to America. It produced...America now is the undisputed leader in genomics technologies.

0:13:03 Because United States invested in early R&D and then enabled it to be commercialized. That's why you have companies like Illumina, 23andMe, Color, Helix, Genome Medical, and dozens of others that then ended up really commercializing it, lowering the cost. Because [0:13:25] commercialization occurs, as you know, Rich. The cost goes down. Innovation occurs. So, NIH is quite in the mode of what they're calling the NIH All of Us Research Program is the Genomics 2.0. It's the next phase of the Human Genome Project. Where it's gonna take it beyond what the previous genome gene sequencing program made happen. So, we have plans. We are already commercializing it broadly speaking. Because the relevance is very high.

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**Rich Bendis:** You are almost like Human Genome Sciences 2.0.

**Praduman Jain:** I guess so. I wouldn't know how to characterize that, but...

**Rich Bendis:** [laugh]

**Praduman Jain:** ...that sounds sexy. And it just sounds...

**Rich Bendis:** Yeah. It sounds sexy.

**Praduman Jain:** Yeah. Good.

**Rich Bendis:** Well, one of the nice things is is that both of the companies have been in this region which means that we've gotta be the human genome capital of the world right now.

**Praduman Jain:** Yeah. We need to talk more about it. [laugh]

**Rich Bendis:** We do. And then one of the things that I think also—we're talking with PJ, the CEO and Founder of Vibrent Health—that you're not just a one dimensional company focused on this only. Because I know recently you've gotten another NIH contract with NCI and that's related to COVID-19.

**Praduman Jain:** Yeah. So, I think what we found, like younger technology companies do, that the world of healthtech is larger. And what has also occurred is that due to COVID-19, what really became front and center is that we are doing this *BioTalk*...in the past we would probably be sitting down in a studio and doing the *BioTalk*.

0:15:09 Now, we're doing it virtually and remote. And we are doing it through digital technology that this web interface is helping us in this *BioTalk*. So, what we saw was a incredible need in the market and a pull, a market pull where the world of health research and health management is demanding and asking more and more of digital health technologies for remote and virtual methods of conducting health research and digital therapeutics. So, we saw more and more of that. And then we started to really look at other areas and COVID-19 being front and center for all of us. Our lives are so affected by that.

0:16:02 That we saw that NIH also wanted to invest in creating solutions that can help with opening up of society responsibly. Based on data. So, opening up of workplaces, opening up of society, opening up of venues, communities, events. How can NIH help with creating data driven

approaches to COVID-19 response? Which there has not been. Rich, I'm sure you are watching. We're all looking at how our nation is tackling COVID response either through contact tracing or other means. It's not being really data driven. So, this was a intense competition, rapid competition, that NIH went through and NCI conducted it. And we were one of the 200 applicants that applied.

0:17:03 And what really helped us is that we had an existing health technology platform that could be rapidly adapted to meet the needs for a COVID-19 response in the context of contact tracing. So, yeah, that was another. We were very pleased with that and working really hard to implement the innovations needed for data driven decisions for COVID-19 response.

**Rich Bendis:** And what is the status of that project and technology today? Because it's badly needed by everybody around the world.

**Praduman Jain:** I think that is where we all feel incredibly excited and sometimes feel like wish this had occurred a year ago. So, these were just awarded a month ago. And we're all working really hard and want to accelerate it. But I also am reminded that technology should be validated.

0:18:05 It should be scientifically validated. It should be validated through research methodologies. So, healthtech in the past had not focused as much. We are really focused on making sure that scientific methods and premise is front and center. And science. We lead with science. And science includes how do we not only develop the technology, but how do we validate it, scientifically? With populations. In different settings. With different diverse communities. So that we can bring the benefit of the technology to broader populations.

**Rich Bendis:** That sounds like a principle that everybody should endorse, including those who are developing vaccines.

0:19:01 Correct?

**Praduman Jain:** I think [laugh]—

**Rich Bendis:** [laugh]

**Praduman Jain:** —really hot topic. But, at a high level, principally, yes.

**Rich Bendis:** Yes. I agree.

**Praduman Jain:** And I think they are. And to be honest, the NIH investment in the All of Us Research Program is exactly designed to lead the way to show a path to bring underrepresented populations during the development of vaccines, therapies, and drugs. And we have proven in the last three years because our population representation in the 430,000 people that I mentioned early on, 82% of that is underrepresented in biomedical research. That's by design. So, what NIH is showing, it is possible to do that. And 52% are ethnic minorities. So, they are doing that.

**Rich Bendis:** I think we can see the importance of the underrepresented populations being a focal point based on who's being affected most by COVID-19 pandemic.

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**Praduman Jain:** That's right. So.

**Rich Bendis:** Direct correlation.

**Praduman Jain:** Direct correlation. Absolutely. And so, our project does involve testing for contact tracing technologies with African-American populations and communities that are directly affected by COVID-19.

**Rich Bendis:** Well, it sounds like a very worthwhile project, PJ. And congratulations on both of those fronts. And in addition to what you're doing on the contact tracing digital health program as well as the All of Us, are there other areas in your portfolio of future products that you're thinking about now or have under development?

**Praduman Jain:** Yeah, we do. So, the way we think about it, Rich, that we have innovated, created software and technology platforms for health research and health implementation with broad set of population.

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So, it's a population health platform. So, some of the other use cases that have emerged is for example, one use case is around...so one of the biggest news that we all see is universities, education, and campuses, right? That is in the news everyday. With incredible richness that we have in our country with many, many diverse higher education institutions from community colleges to universities to academic medical centers to large academic institutions, small academic institutions. We have such incredible diversity and richness of higher education system. And one of



the things that they are really struggling with is how do I help with overall improvement of health for my cohort, my students?

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So, we are seeing a lot of need emerge. We're saying we want to be able to help our students understand about their own health. We want to do along with students, certain health research that is longitudinally focused over a long period of time, so that we can improve the experience and the health of students. And can we look for some markers that can help? Because by the time anyone of us, we are 40, 45, 50, and we learn about any chronic diseases that may have developed, those would have developed a period of 30-40 years. It doesn't happen instantly, overnight. So, we are seeing a need by universities and higher ed where they're saying can I help my students understand the value of health, health management?

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So, 30 years later they don't end up diabetic and hypertensive and heart disease. So, that recognition is also helping us with create spinoff products from our main health platform that we are already developing. But specific offerings that are more targeted towards the student populations or higher education institutions.

**Rich Bendis:**

Well, it sounds like you have unlimited opportunities. And with those unlimited opportunities you have, PJ, I guess the question is, you're located here in the BioHealth Capital Region in Northern Virginia. How good is this region to be located in as it relates to the need you have for talent to grow your company, your proximity to customers, access to capital that you need?

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A lot of people talk about Boston, San Francisco being the leading regions in the country for companies like yours to grow. But it seems like you've been able to do that in your backyard back here. And do it as well, if not better, than some of the other companies that are in the Boston-Cambridge and the Silicon Valley area.

**Praduman Jain:**

We feel really fortunate, Rich. You are right. It's been a very, very hard journey for us. Really hard journey. Because this region after the MCI, Worldcom, and AOL, and some of the product companies that used to be this region, our region, was so rich in innovation and new product development in the telecom area. And most of the telecom companies have left the region. And just overall, this region has become fantastic in

IT services and government contracting and because of that, we don't see as much of a mindset around product development and software that is durable and sustainable over time.

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So, it has been a challenge. But we have instituted really good training programs in the company. And we hire senior people who have been around the block, but we also hire junior talent and we rapidly train them. I would admit to you that if it was Silicon Valley, Boston, or New York, talent pool that is used to developing software products and high tech, would be a lot higher. And that does pose a challenge. But we had no choice. We had to do it. We did it. And that being said, it's a great ecosystem in this region. Whether you talk about cybersecurity, you talk about AI machine learning. And sciences, research. We have the DARPA, the DOD, the NHI, the NSF.

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So, there is incredible amount of funding in the area for innovation. There is also incredible amount of talent that has the knowledge and the expertise. They may not have experience in building software product. But they do have the knowledge and the expertise in some of those areas. So, this is a great area we have started working with universities directly now. So that we are informing them about emerging needs. We are helping shape their curriculums for bachelor's and master's levels. And we are also getting involved in their capstone projects and internships so that we develop a rapport, a relationship, and that starts to then create awareness about our company. And for top talent to come and talk to us as they look to start their careers in product companies.

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And help build product that's going to benefit billions of people over time potentially.

**Rich Bendis:**

Well, I think that you're doing those activities that are important to get the younger people to recognize there are great opportunities in this software area. Because it might not be as visible because of the emphasis on therapeutics and diagnostics, medical devices, and other healthcare related activities. But when you have the proximity, as you stated, to the assets we have here, which are unparalleled than anywhere else in the world, by having the FDA, the NIH, the NSF, NIST, and a lot of the other federal organizations. Plus, I don't know if you know it, we have 2,300 companies in Maryland, D.C., and Virginia focused on the BioHealth industry, PJ. Which is really a strong cluster. But I think what you're on

the precipice of doing is creating greater awareness of the opportunities that exist in the technology and software development world that we need to take advantage of with these assets we have here.

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And build a stronger cluster and ecosystem around that. So, it's nice that we have a leading company like Vibrent Health who's gonna help bring the paradigm back to where it was 20 years ago. Maybe even 30 years ago. As you mentioned, with the telecom and the internet companies that were focused here, I think you're gonna be one of the anchors to help bring us back into prominence again.

**Praduman Jain:**

We certainly hope so. It's a very big responsibility, Rich. And we are up for a challenge. I think one of the gaps that we all can work towards is I would say the lack of, from an investor funding standpoint, we see quite a bit of difference between Silicon Valley, Boston, New York, and the Washington, D.C. area. As you are probably very familiar looking at the Pricewaterhouse, PWC reports.

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The funding reports. This region significantly lacks in funding high tech and software and product companies. There is just not enough investors here that understand and that have a vision for recognizing the potential of different companies. So, I think the mindset is a little different that it's not a pieces driven market here.

**Rich Bendis:**

There's a new fund that just started up in Northern Virginia. I mean, it was an old fund focused on fintech. But now they're in health technology, specifically. Right in your sweet spot. Have you heard of Route 66?

**Praduman Jain:**

We have not.

**Rich Bendis:**

Well, you need to take a look at them. Route 66. And one of the people there, Ben Britt. They're making investments now throughout the United States. They're just starting their health fund when they were in the financial technology space before.

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And they've pivoted to healthcare. They're gonna have about \$150 million to invest. They've done about three investments. And I got to know them because they're going to participate and I don't know if you're aware of it. We're havin' an investor conference that we do with J.P. Morgan and Wilson Sonsini. This'll be our third year. Unfortunately, it's virtual. But we're inviting a hundred companies and 50 investors to be

able to connect with one another. The investors will choose the companies they're interested in meeting with. And will set up introductory meetings with those investors. And Vibrent Health would be the ideal type of a company that would fit into that software category. And here you have an investor in your own backyard in Northern Virginia that you're not aware of and they're probably not aware of you. So, one of our roles at BioHealth Innovation is to find ways to connect people. But, if you had any interest in participating in that investor conference, not knowing where you are with your future growth and capital needs, it's not too late to apply.

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And we really look at it as almost being the J.P. Morgan of the east conference, which has been badly needed. And we're attracting many new investors who have never looked at this area of investment possibilities to get engaged. And we're seeing some success occur from that. So, if you want more information on it, please let me know.

**Praduman Jain:**

Thank you for letting me know that. We had not focused, as I mentioned, since the company started about 10 years ago, one of the philosophies that we had was because other people used to ask me. You have to show that somebody cares that you have relevance in the market. So, we've laser focused on put your money where my mouth is. So, funded the company, self-funded the company and then found ways to generate capital that was non-dilutive through grants and other mechanisms.

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And then we landed this very large NIH All of Us Research Program opportunity, as well as the NCI COVID opportunity. And all of these are helping us solidify our platform. We have already started to commercialize broadly. And along all of these, we just felt like we should stay focused and continue to build intellectual property and the products. Now we have reached this stage, Rich, where we feel we could be commercializing faster than we are able to with internal resources. And I think we have reached that pivot point where we could grow the size of the pie pretty significantly if we had additional marketing, sales, and management resources. Which is typically what investors like to fund. So, that's where we are thinking that we should not starve the business of resources needed to make it a durable, sustainable, high growth, long term company.

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**Rich Bendis:** Well, I think what you've demonstrated is you have validation and credibility now and some large customers within NIH. And whether they're public or private, they're still customers. And you're developing your revenue base based on these contracts. So, I think you're valid right now. You're credible. And great time to be able to see what other spinoff opportunities there are for growth. So, after we're done with this podcast I'll send you some of the information on this conference if you have an interest. And also, one of the other things BioHealth Innovation's doing, PJ, is we're looking to potentially form a \$50 million investment fund for this region. And we're in the process of capital raising right now and have a couple good anchor investors and hopefully 2021 we would have a new fund to be able to fund some promising companies like yourself in the future. So, we understand we're understated from a capital perspective.

0:34:00 But, we've had significant gains in some new investors investing in companies in our region that had never done it before because we were looked upon as sort of a drive-through or a flyover region. And I think the dynamic is changing. So, I'll be glad to get you some more information on that. But before we close, do you have any closing remarks you have for our listeners that you would like to share with them either about the company, yourself, or the region?

**Praduman Jain:** I don't know how you do it, Rich, with the number of things going on in your organization and your leadership. And bringing capital to the region, bringing organizations together. I don't know how you do it. I am sure it's 16 hour days. So, I want to really thank you for your leadership. And I want to thank the work that your organization does. I think there is lot more that we can do together and particularly the BioHealth Region and BioHealth Innovation organization.

0:35:00 As an organization. Think people need to know more about it. Learn more about it. My closing remarks would be around really two things. Encouraging others to never give up if they believe in something. And this is not advice coming from reading something. This is exactly the journey that our organization has gone through. We have come through impossible odds. Because we had no capital. So, we generated our own capital and we beat incredible, impossible odds. And that's a testament to my team. That's a testament to the passion we bring. And as I mentioned, we just believed that there is a big gap and we are going to

fill that gap. Let's go figure out how to fund ourselves. And we did it. And I think the other advice I'll leave behind is just what I have learned. Tenacity combined with rapid innovation.

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Nobody waits. Market doesn't wait. Technology doesn't wait for anybody. So be fast. And have the tenacity combined with the passion. Lot of entrepreneurs have passion. But you need endurance. And you need tenacity that goes with passion. So, my final words are just encouraging others to follow your dream and along the way you are going to encounter lots of ups and downs. And dead ends. And don't be discouraged. Find ways to come back and continue your journey. With that, Rich, thank you so much for talking to me and for this nice *BioTalk* that we just engaged in.

**Rich Bendis:**

Well, PJ, thank you. Congratulations on your success to date. And I know it's just the beginning for what you're really gonna achieve in the future based on having the right attitude and the right team that you've accumulated at Vibrent Health.

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We will definitely look for ways to work together. And sometimes people have these artificial geographical boundaries like rivers and bridges that separate them. But I think we can break those down very easily.

**Praduman Jain:**

[laugh] Yes. Yes.

**Rich Bendis:**

Because they're just artificial because if you look at what we're doing today in this virtual world, we're communicating with people all over the world. I just had a conversation with an investor in Dubai this morning. Had one with one in Italy yesterday. And I'm sure you do the same thing. That COVID-19 and the pandemic has created a lot of challenges for a lot of people around the world. But I guess the key is how do you take advantage of the opportunities that have emerged through it as well. And I think that's what you're also experiencing. So, congrats to what you've done. We'll definitely follow up and see what we can do together. And we'd love to be a partner with you to help grow the region even more. So, thank you very much.

**Praduman Jain:**

Likewise, Rich. You have support. And we are proud to be a major biotech employer in Northern Virginia.

0:38:00                   And I think we would love to see the journey continue. So, we are working to continue the journey of higher levels of employment and job growth in this region. And we look forward to your support. And thank you for this *BioTalk*.

**Rich Bendis:**           You're welcome. Thank you, PJ. And good luck in the future.

**Narrator:**             Thanks for listening to *BioTalk* with Rich Bendis.

**End of recording**