

Justin Yang

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*, where we interview leaders within the BioHealth Capital Region that are making a difference in our ecosystem. And today, we are pleased to have an individual affiliated with an organization whose name we've heard as much as anybody's organization in the United States over the last three to four months. And we're going to talk more about that when we get into our interview, but we really are fortunate to have Justin Yang, who's the Catalyst Office Director for BARDA Division of Research Innovation and Ventures. Long title, but very important responsibility. Justin, welcome to *BioTalk*.

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Justin Yang: Thank you, Rich. Thanks for having me. I'm happy to be here.

Rich Bendis: Well, we're all excited to chat with you because BARDA was a little bit of a mystery to a lot of people in the United States until COVID-19 and the pandemic hit. And now, you're almost as popular as Tony Fauci. Except you're probably more popular because you have money to dole out, where Tony's really giving advice. So our listeners are going to be very excited to hear a lot about BARDA today. So, Justin, before we start, they'd probably like to learn about your background and how you got the experience to transition into the federal government world with this organization. So let's talk about your background and how you evolved to where you are today.

Justin Yang: Great, thank you. So yeah, it's kind of an eccentric or nontraditional background. But originally, I'm basically in DC all my life, went to DC public schools, and then moved over to Maryland and Montgomery County, and went to University of Maryland as an undergrad for agricultural sciences, and went to get an MBA after that at East Carolina University.

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So after school, I took a job as a stockbroker on equity financing and trade at what's now known as TD Ameritrade. So this was back in 2008, so you can imagine that was not a pleasant time to be in the stock

business. But shortly thereafter, I moved over to take a research management job at the Uniformed Services University here in Bethesda, Maryland, part of the Department of Defense and moved my way up from there. I basically started out at an animal lab and worked into clinical sciences and clinical research. And after the Department of Defense, did a lot of work in infectious diseases and took a job at Advanced Biosciences Labs here in Rockville, Maryland, which is a subsidiary of Institut Mérieux. And 2016, was hired as a program officer at BARDA for the Zika response.

0:03:00 So since my time in and out of this field, I've seen the H1N1 pandemic, I've been a part of the Ebola response when I was in the DOD, and then shortly thereafter, in Zika, and now COVID-19. So it's been one pandemic or emergency response after another. But all of this experience culminated to kind of what I'm doing today, which is basically at the intersection of business and science here at BARDA.

Rich Bendis: That's a very interesting background. So you have sort of the private and the public experience as well as the pandemic experience, which is in short supply today because there aren't that many people in the country that have been through all the different pandemics that we've had. You've been very fortunate in a short period of time to experience a number of these, as unfortunate as they are. So we're glad that you are where you are, Justin, and doing what you're doing today.

Justin Yang: Thank you.

Rich Bendis: But you mentioned that you're at BARDA, and you're in this division. It sounds like a relatively new division of Research Innovation and Ventures.

0:04:02 So let's talk a little bit about that and where it belongs within the BARDA organization. So first of all, you might just give a brief background of BARDA, and then we'll drill down into your responsibility.

Justin Yang: So I think BARDA, as you mentioned, before this pandemic even, we were probably lesser heard of the organizations. And that's because in HHS, we're one of the youngest organizations that have been around. So BARDA started out basically in 2005 as an official authority, and it stands for Biomedical Advanced Research and Development Authority. It's not an agency, but it is an operating division under the Assistant Secretary for

Preparedness and Response, the ASPR, and in the Office of the Secretary. So what we do, essentially we're responsible for the advanced research and development of medical countermeasures. And you may be asking yourself, "What's a medical countermeasure?" Medical countermeasures are defined by legal authorities, if you will, to include vaccines, therapeutics, devices, and diagnostics, and other technologies that can be used to protect or defend against natural or man-made threats, such as an emerging infectious disease, like influenza or COVID-19, or a nuclear incident, or some bioterrorism threat.

0:05:22 Essentially, the genesis of BARDA came about from, go back a little bit of way, since 2001, and recently for September 11. Two weeks after September 11, 2001, we had an anthrax attack in the United States where it was weaponized, and it was shipped in the mail system. And we, in the United States, didn't have the capability to respond to a bio-incident or bio-threat that occurs, and BARDA really was mandated to step up and defend the civilian population in the United States. So in BARDA, there's various divisions, of which one that I am currently in. It's called the Division of Research Innovation and Ventures.

0:06:03 And it was stood up in 2018, and the newest division in BARDA. So it was authorized through a legislation a couple years ago called the 21st Century Cures Act back in 2016, and DRIVE is responsible for the early stage innovation and research development here in BARDA. In DRIVE, we have two main research programs right now that have existed in 2018. It's called the Solving Sepsis Program and looking at treating sepsis and identifying sepsis, as well as ENACT, which is Early Notification to Act, Control, and Treat. Within DRIVE, we also have a Catalyst Office, which is the office that I sit in, and in that office, we really look at three cornerstones. One, we'll talk more about, which is the Accelerator Network, where we built up this infrastructure to help startups and new research. We have the second cornerstone, which is called BARDA Ventures, which is an equity-based financing approach to give entrepreneurs and startups, using the same techniques and strategies that has made Silicon Valley and venture capital so successful.

0:07:10 And then finally, a new program, which we call DRIVE Start, which is incorporating a weekly TED Talk-like series that we invite distinguished speakers up for a close and personal setting to discuss innovation and the

future of science as well as providing avenues for seedling fundings within DRiVe as a whole.

Rich Bendis: That's very interesting because it sounds like you're at the epicenter really of the early stage technologies, and breakthroughs, and entrepreneurs, and scientists that can really make a big difference in the future. And it's nice that they have sort of a window to enter. Because generally, big companies know how to play the game. But it's really this innovation space that's a lot more difficult to manage and navigate.

Justin Yang: That's absolutely correct. I mean, I think the whole reason why we have the Accelerator Network, the whole reason why we have DRiVe as a division, is correct.

0:08:04 It's the resources involved to partnering with the US government that's often a barrier for small startups in biotechnology, where they have a single product or single candidate that they're focused on for a commercial indication that may, within the US government—the whole purpose of DRiVe was to tear down that wall. We've made it such that the turnaround time of funding is as little as 12 days. That's our record.

Rich Bendis: Wow.

Justin Yang: From a submission of a proposal to a signed contract. So I mean, that's unheard of in the government. Better than any SBIR, better than any types of funding. I mean, there's some types of groups now that work in the same manner, but our proposal requirements is 4,000 words, and that's it. So it's meant to be less onerous and burdensome so that the opportunity cost associated with working on something that we care about greatly is reduced.

Rich Bendis: And I guess with your division and DRiVe, it works across all of BARDA.

0:09:02 And I guess that's to be seamless. But there's many programs and divisions within BARDA, but I guess this is one that crosses against all of those different programs and divisions, correct?

Justin Yang: Correct. Yeah. It's meant to be a, if you will, scaling partner within BARDA. It's meant to be a, kind of if you go back to like the eighties, the word skunkworks, which you prove it out, and then we transition it. Whether it's within BARDA or any other agency that we work with every

single day, the work that we're doing here in DRIVE, it's really meant to be the early-stage proof of concept, if you will, research that's necessary to then take them into a IND/phase 1 if it's a drug or a vaccine. Or if it's a diagnostic, getting them to that prototype device, if you will.

Rich Bendis: So that's sort of the introduction of how DRIVE and your group really works in the healthcare and the life science industry, correct? Expand upon that a little bit about the typical types of partners, how you interact with them, and what are you targeting and looking for in the healthcare and life sciences industries?

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Justin Yang: I would say in the industry as a whole, BARDA has been a very valuable partner. And I may be a little biased. But with regards to advanced research and development for certain pharmaceutical products and technologies, really, I mean, we're the late stage developers. I mean, people go to NIH, they go to DARPA, they get that early-stage funding, and then they come to BARDA to finish it, where we then pay for the phase 2, phase 3, and post-licensure activities. We've worked with many, many of the large pharmaceutical companies as well as the mid-size biotechnology companies as well. We also have partnered with universities and really early-stage startups as well. So there's really no limit to what we work with other than we have set requirements, as you've said, where we care about the setup concerns that are either chemical, biological, radiological, nuclear, or infectious disease that could pose a risk to the United States health security mission.

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So it's interesting. Something that I want to bring up is that a Forbes article written in 2018 when DRIVE was launched called us a venture capital organization within the US government. Really, BARDA focuses on this rapid development support and investment with companies and startups to advance their product as a partner, if you will. And we view anyone we support and fund as a partner in the product development space.

Rich Bendis: So I guess I go back a long way, as you can probably tell by my picture here, but at the end of the day, there was a program that NIST used to have called the Advanced Technology Program, ATP. I don't know if you remember that, but it almost sounds like, when you're talking about

later-stage development and some of the larger companies, and they also got involved with smaller companies later, this seems like a take-off on the old ATP program that used to exist within NIST. Are you familiar with that?

Justin Yang: Unfortunately, I'm not.

0:12:01 But I do know that there's this term of the Valley of Death, and it's meant to address that second Valley of Death, which is you get really good phase 1 safety data, and traditional private investors may say, "So what?" And you don't get that traditional funding to take you the rest of the way. And BARDA, since our genesis, really has been focused on that. I mean, we've brought 55 products to market through regulatory approvals from the FDA, whether that be a vaccine, therapeutic, or diagnostic. Well, put us up against any mid-sized life science company; 55 approvals in just around 12 years is a pretty good track record.

Rich Bendis: That's pretty good. I think that we could take you public on the New York Stock Exchange pretty soon. At the end of the day though, it takes money to do all of this. So talk a little bit about the BARDA budget, and then how is that broken up amongst the different programs you have within BARDA?

Justin Yang: The annual budget that we have is comprised between funding that is given to us in three different buckets.

0:13:01 We have a pandemic influenza budget, we have an advanced research and development budget, and we have a Project Bioshield budget. Project Bioshield, I'll talk about, which is really meant to be a late-stage procurement-based model that is around \$700 million per year historically. The advanced research and development and pandemic influenza budget is also around--those combined are around \$700 million during peacetime. So translating that to just under \$1.5 billion in total annual operating budget to award out in terms of contracts. We deal with mostly far-based contracts. We don't do very many grants, if at all, to your audience.

Rich Bendis: And then when you talk about contracts, and then you were referring to yourself as a venture capitalist, I would imagine you have In-Q-Tel, which is another venture capital entity within the federal government.

0:14:01 But to be called a venture capitalist, generally, they take equity and ownership in things that they fund, and maybe you might explain what you do in that relationship and how the contracts and the investments work.

Justin Yang: We do have a new program called BARDA Ventures. Full caveat, it's not launched yet, but we have been conceptualizing this idea in the past couple years. And it's an authority that was established in 2016 called 21st Century Cures Act, which stood up DRIVE, essentially. And in the legislation, it's fairly specific. It talks about partnering with a nonprofit venture capital organization that can deploy funds that are provided by BARDA to invest in the equity-based model for companies that may be seeking financing. Sort of, as you mentioned, like the In-Q-Tel model. BARDA Ventures will focus on enabling kind of advanced response capabilities of the United States, and this partnership is meant to be an effort that is a cost-share in best effort of a cost-share of one to one.

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Justin Yang: So the contemplation that we have right now is that we want to get up to \$250 million of a venture fund, and we would like whoever we partner with, which we have no idea right now, we'll put a solicitation out on the street to go out and raise another \$250 million of private dollars, such that the risks are shared between the public and private sector.

Rich Bendis: And if, in that type of a match, for a half-a-billion-dollar fund, would then you also be able to share in the equity that a traditional venture capitalist would take so that there would be a return on the investment that the government's investing?

Justin Yang: Yeah, so the way that we've thought about this is that the government portion of the investment will be equity-based, and on the cap table, on the terms sheet, it will be the nonprofit partner. And they will invest in our best interests. And any returns that are given will be reinvested into the fund. And hopefully at the end of five years or seven years when we're going through this harvest period, that we will see these returns, and these returns can then be reinvested into health security concerns that benefit the American people for our portion of the fund.

0:16:16 For the private dollars that are being raised, that's up to the private partners. If they want to continue to reinvest, they're more than

welcome to. They want to take out their portion and collect, they're more than welcome to as well.

Rich Bendis: Great. Well, it's very refreshing to talk to somebody in the federal government. I interact with venture capitalists every day. But it's rare that you talk to someone in the federal government that's talking the venture capital lingo and the way that the government could be investing money to get returns to create sustainability in the programs every year. So this is very refreshing, Justin.

Justin Yang: Right. Rich, I want to just make sure, this is not a one-size-fits-all thing. So there are some things that we really care about in BARDA and the US government that may not be perfect matches for this venture model.

0:17:01 We support the sustainment of anthrax vaccines and smallpox vaccines that just don't have a commercial marketplace, that will never have one, but it's very important that the US government continue to invest in this space. The ventures model will be really meant to not cannibalize, if you will, our existing business verticals, but more so to augment the response capabilities. So we would be investing in technologies like next-gen sequencing or some new manufacturing processes that can be platform-based so that we can apply it to a wide variety of commercial needs as well as the US government needs as well.

Rich Bendis: Well, that's pretty exciting because an analogy in the NIH would be, generally with the blockbuster drugs that can evolve from a lot of the major diseases, but you have orphan drugs, which have very small markets that still cause a lot of pain and agony with people around the world, but yet, the venture capitalists aren't interested as much in those because it's not going to be a 100x return.

0:18:00 So it sounds like, in some ways, what you're trying to stand up is similar to that because there's needs that people need to do research in these areas, but they might not be the biggest areas to generate significant returns or be billion-dollar products. It's refreshing to hear that because it's nice to know that there may be a source of funding available that can invest in these very important and emerging technologies that can be beneficial to all of us.

Justin Yang: Yes, absolutely correct. I completely agree with what you said, and I think that we understand this marketplace that we're in is not the cancer

immunotherapy that you're going to have a billion-dollar-a-year drug on. We're not in it to make money. I mean, as the first and foremost, it's the double bottom line for us where we want the impact, which is more important.

Rich Bendis: Well, I jumped right into the venture capital because that's very exciting. I am an investor, myself. But we skipped right over the Accelerator Program, which is another exciting program, which BARDA's taken on.

0:19:00 And we've actually been an applicant to the Accelerator Program a couple years ago. And why don't we give the listeners an update on sort of the accelerator program model that you've created at BARDA?

Justin Yang: The accelerator model we've created here -- I mean, now we're in year three of the Accelerator Network, if you will -- is that we've built the network of 13 accelerators across the country that's focused on providing wraparound business support services and meant to accelerate technology development in medical countermeasures and health security. So one thing that I do as well as, Rich, you talk to startups and entrepreneurs every day, basically the check is great. Having that is good. But also, oftentimes when I think of my group and my office, we think of ourselves as company builders or shepherds, if you will. I mean, the Accelerator Network's an extension of that, where they know the greatest challenge for startups is often enabling how to run a business, how to raise funding, how to develop a successful pitch deck, and making connections.

0:20:05 So the Accelerator Network really was built to stand up as this push and pull function by providing market research intelligence to the US government, to BARDA, as well as helping BARDA and non-BARDA participants navigate the federal funding kind of landscape, if you will. That in itself is important. We know that innovation doesn't occur just on the I-95 Beltway or in San Francisco down to San Diego. I mean, there's good things that are happening all across this country, and we've made a very cognizant approach of, "Yes, we need to put accelerators in these areas." But if you look at our map right now, we've filled in the middle parts of the country, and we've gone to Texas, we've gone to New Orleans, right across the street from Tulane, just to make sure that we capture people who may have never even thought of government

funding as a viable option, just so that we can try to attract some of this new innovation that's occurring.

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Rich Bendis: And this accelerator program and network that you've built can actually be a feeder for your Venture program, I would imagine.

Justin Yang: I mean, that's absolutely correct. We've thought about how we can kind of combine this investment approach with this accelerator approach, and a lot of venture capital firms, as you said, have an accelerator kind of model within their investment fund.

Rich Bendis: And when you talk about these 13 around the country, I'm just curious, since we're very interested in the BioHealth Capital Region, as we refer to it, of Maryland, DC, and Virginia, what's the closest accelerator you have in your network to this region?

Justin Yang: We have University City Science Center in Philadelphia is the closest one that we have. So when we looked at the region, I agree, like we did analysis of where the new innovation is occurring in the country, and we've tried to put accelerators within these regions. And I mean, I would say for the BioHealth Region or the Capital Region, just to stay tuned, and we could be adding on to the Accelerator Network.

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Rich Bendis: We'll stay tuned because we've been building the brand for about five years. And just to educate you a little bit, *Genetic Engineering News* does a ranking of the top ten biopharma clusters in the United States every year. They're getting ready to update it in the next week or two. And this BioHealth Capital Region was sixth about, let's see, three years ago. We're number four now. You have Boston, San Francisco, New York, and the BioHealth Capital Region. And if you really look at the assets that are here, they're unparalleled. Look, we've got you guys. We've got NIH. We've got FDA. We have CMS. So if you want to do any pricing, you want to do regulatory, you want to do research, or if you're looking for policies, and you have 2,300 companies in the backyard—and I'm going to quit selling, Justin, in a second here. But the BioHealth Capital Region definitely is something to think about in the future for accelerator expansion, I hope.

Justin Yang: I don't disagree with that. Completely, I agree. GSK's right in my backyard, and we work with them all the time.

0:23:00 And Novavax, and all those. So yes, absolutely.

Rich Bendis: I'm glad you brought that up because Warp Speed funding is another thing that a lot of people in the country have heard about. And I just got some statistics on the top recipients of Warp Speed funding over the last six months. And this might surprise you, but five out of the top ten recipients are based in the BioHealth Capital Region. We have AstraZeneca, GSK, Novavax, Emergent, and Phlow, down in Richmond, Virginia. So it's amazing, we're sort of becoming a little epicenter around the world because of the strengths of vaccine development manufacturing as well as diagnostics and therapeutics that goes on right in our own backyard. And Warp Speed is helping shine a light on how important this region is to the world.

Justin Yang: I think with regards to Operation Warp Speed—so full transparency to your audience, I don't work on Operation Warp Speed, but it is comprised of BARDA members, and we are working very hard every day to ensure that we bring these technologies that are necessary to combat this pandemic that we have.

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Rich Bendis: In order to give the listeners a little more perspective, so if somebody's out there listening and say, "Hey, I've got something, I think, that Justin would be interested in, or one of the programs," what's the best way for them to interact and find out more? And who do they contact, how do they contact, and how do they sort through all the different morass of programs that you have available to them?

Justin Yang: The first thing, I would say, is to go on our website. I mean, it's [medicalcountermeasures.gov](https://www.medicalcountermeasures.gov). And we can post it up. And I'll be fully transparent with you guys; I would say that my office and then BARDA, most of the people that you talk with, we're industry people. We're not your traditional government place, where you can call me any time. I mean, my email is there, my phone number's available. When COVID-19 was declared a public health emergency, we activated what's known as the CoronaWatch Portal.

0:25:00 I mean, we've taken intakes of thousands and thousands of requests for meetings, where people can just come in and give us a run-through of their technologies and their ideas, and we'll be available to talk to them. Whether or not we support them through funding efforts, we give them advice, we bring in the regulatory experts, we bring in the clinical trial design experts, and we bring in some manufacturing experts just to provide help and feedback. I would say on average, we have anywhere between eight to ten phone calls a day with companies since February just to make sure that we find these technologies. With regards to funding opportunities, we post those up on [medicalcountermeasures.gov](https://www.medicalcountermeasures.gov) and on FedBiz--sorry, no longer called FedBizOpps--but beta.sam.gov. And if you just type in BARDA, we have two announcements open right now, of which, there's a wide, wide variety of topics. COVID-19 is one of them, but we also have topics where we're looking for repurposing of drugs for chlorine injuries, of inhaled chlorine as a chemical attack.

0:26:02 We have a very broad topic area, and they're open year-round. And broad agency announcements, as you know, are funded in a rolling cycle. So if you have something that applies, first and foremost, make sure you get on the phone with us and talk to us, and we'll give you that feedback that's necessary. And then secondarily, you can submit a proposal for consideration of funding.

Rich Bendis: I'm glad you mentioned rolling. A lot of the listeners might not understand that. Because if you do an SBIR proposal, generally you have a call for proposals, you have a deadline, it's open for X-period of time, and then if you miss that window, then you have to sort of wait for the next call. And what you're saying, rolling is ongoing throughout the year because you're trying to find the best solutions whenever you can find them, regardless of not having a definitive call-for-proposal date. Is that correct?

Justin Yang: That's correct. I mean, there are some dates on there, but between then and that date where it could be extended, could be closed, you submit your proposal in for consideration, and there's no particular kind of special topic that ends on this date.

0:27:09 So it's rolling. And what I like to say is that we treat it on a first-in, first-out basis. But obviously, a lot of factors are in consideration. But yes. So

rolling just means if you get your proposal in, you get your adjudicated review on that basis.

Rich Bendis: And then these would generally be contract investments rather than grants, correct?

Justin Yang: Right. So what we're talking about outside of BARDA Ventures, if you applied to our broad agency announcement, it's all non-dilutive, far-based, or some other transaction type of contracts where there's a very discrete or a distinct statement of work associated with the costs associated with doing that. And when you get a contract from BARDA, you join a family. I mean, our greatest asset here at BARDA is the people that we have. And I can get any expertise that we need through either subject matter expert networks or hire them in-house and just bring them to the team.

0:28:06 You may have a team of 12 people on your company that you bring in, whether they be manufacturing or regulatory. We'll bring in 12 people just to help you guys. And that's the associated power of not just providing funding but also providing that support that's necessary to co-develop, if you will, this product.

Rich Bendis: Well, that's very educational for everybody, Justin. And the BARDA program is one that's been a well-kept secret. It's finally out of the closet because of an unfortunate reason. But I think the pandemic is making people more aware of this valuable resource that they may not have been aware of before. So I really like your point of entry, because it's really when you talk about Research Innovation and Ventures all coming together, that means that somebody that has a good idea doesn't get left out in the cold, because you're interested in looking at things at any stage of evolution or development if it can make a difference to meet one of your mission goals.

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Justin Yang: So the traditional BARDA broad agency announcements, there are some focus areas around how advanced you are in your technology pipeline. But for DRIVE, really, we do not have that kind of tier or limit, if you will, for the audience who knows technology readiness levels. But we support - as long as there's sufficient data that proves whatever you're trying to prove, yeah, we will consider it.

Rich Bendis: And you talked about three different things--accelerators, ventures. I missed the third one. Something smart?

Justin Yang: DRIVe Start.

Rich Bendis: Oh, DRIVe Start. OK. Did we talk about that yet, or is that something that we didn't really focus on much?

Justin Yang: DRIVe Start is more so of an internal kind of innovation program that we have where it's really looking at bringing in distinguished guests and speakers in the field and asking them what the problems and what the solution is. So I want to give a shoutout to my DARPA colleague in the Department of Defense. We really kind of took their model of bringing in the best minds and having that refreshing continued goal of improvement.

0:30:05

Justin Yang: I may have a certain bias or lens that maybe five years from now will totally be stale, if you will, but I'll still be passionate about it. But we want to bring in continuous people that are in the field that are experts to kind of tell us exactly what is the next thing. And then if that next thing has legs, we can put some funding behind it and start a new program. And that's kind of how we're going to develop these new programs outside of the ones that we have in sepsis and ENACT, which is really biosensor development, diagnostic development.

Rich Bendis: Well, that's interesting. That's sort of your knowledge sharing to look at new innovative ideas. And it's sort of an open innovation type of a forum I guess, right?

Justin Yang: Correct.

Rich Bendis: So what is it that you and I haven't discussed that you think that the listeners of *BioTalk* would be interested to know about your program or BARDA in general? And just to refer, we're talking with Justin Yang, who's the Catalyst Office Director of the BARDA Division of Research Innovation and Ventures.

0:31:04

So, Justin, what have we not stated that you think would be educational for anybody?

Justin Yang:

I guess just two things that I want to make sure that I let your audience know and let people know who are listening is that we just launched a new program in conjunction with Johnson & Johnson JLABS called Blue Knight. It's an incubator model that we recently looked at to focus JLABS in DC, in conjunction where they're building up JLABS in DC, to focus on health security threats. And to direct your audience, if they're interested in learning more about this Blue Knight partnership, to go to the JLABS Blue Knight website and learn more. I mean, we're offering opportunities for potential JLABS fellowships, if you will, where we provide space if you're working in this kind of health security space. That's just basically another plug for something that's not pure funding, writing a check, if you will, but also providing this resource for startups that want to get involved with BARDA.

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And then also, one other thing is, we have an industry day that's coming up. It's called BARDA Industry Day, and we have it every year. Usually, it's in downtown DC in person, but this year, it's all virtual. It's going to be on October 27. It's our flagship industry meeting. It's open and free to the public. We can't replicate 100% of the in-person experience where you basically can set up side meetings or talk to collaborators and whatnot. But we're going to try our best. So be sure to go to our website and register today. It's another opportunity to know more about BARDA.

Rich Bendis:

Tell them your website again.

Justin Yang:

www.medicalcountermeasures.gov.

Rich Bendis:

Great. I'm glad you brought up Blue Knight because I just had Sally Allain, the DC Director for JLABS on a *BioTalk* two weeks ago, and then, of course, Kurt Newman, who's the President of Children's National Hospital, is on my board of directors. So what you're referring to also is what the vision is in DC to create this new innovation campus, that the old Walter Reed facility, which Children's National is taking the lead.

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But I understand BARDA's got an innovation center, JLABS has a JLABS innovation center there, and then Virginia Tech's putting a little

innovation center there on that same campus. And is that where the Blue Knight program sort of fits in to sort of that whole campus environment, Justin?

Justin Yang: Yes, that's correct. I mean, there will be a certain dedicated amount of space there, right there in the old Walter Reed, once it's built up. And Blue Knight-facilitated companies will be able to colocate in that space and be mentored by both Johnson & Johnson as well as BARDA specialists.

Rich Bendis: Well, that's exciting. The DC Metro area has been looking for an anchor really from an innovation perspective. And I think what you're creating in partnership with those other entities is really going to be sort of a neat little ecosystem right within the district there, which was needed for leadership. So is there anything else from an open-mic perspective that you'd like to share? Or do you think that we've covered everything in your bailiwick?

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Justin Yang: One other thing would be that we launched this new program a couple months ago, really, and we have a EZBA topic out there. I want the people to think about this. When you're making a vaccine, we're considering more than just an antigen and adjuvant. We're considering more than that. Because when you vaccinate the entire United States population, the amount of syringes, needles, and transport of these vials needs to be considered. So we've really started thinking about this new idea called Beyond the Needle. That's our new program name. And the conceptualization would be imagining a world where vaccination could be completely pain-free and be administered beyond a doctor's office. And that's what we're looking to achieve. We're looking to achieve taking a biologic administration and putting it on a patch or taking your vaccine and making it into an oral-dosed pill where you can basically do it anywhere, and we don't have to worry about the cold chain. These patches are very small, they're thermal-stable, and we don't have to basically do a mix at bedside and try to figure out, "How do we vaccinate the entire United States population?"

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So if you guys have a solution for that, we have something open right now. And be sure to reach out. And just want to caveat that most likely

this technology that I'm talking about today will probably not be making it in time for any COVID-19 or pandemic vaccines that are currently being developed. But we are constantly thinking about the next pandemic, which *will* happen. We just don't know when.

Rich Bendis:

Yeah, we do need to think about the future because everything's not just going to be solved in the next three to six months for sure. It's good to see that you have that forward thinking, and thinking about--it relates to something that we're considering doing in this region, Justin. And I'm a member of a task force, the Greater Washington Board of Trade, and something called Connected DMV. And based on all of the attention, and assets, and resources we have in our backyard here, we're considering forming a global pandemic prevention and bio-defense center that would be located right here in our backyard.

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And BARDA would be an unbelievable partner for that. Offline, we can talk about that in the future. But we just think with everything that's going on right now and all of the companies we have, the FDA accelerated approval processes going on, the NIH with all of their research institutes and 6,000 scientists right here in our backyard, and the progressive nature of the BARDA program, it really says that we're really the epicenter in the world right now to help prevent and deal with future pandemics that are going to arise, as you say. So we look forward to being a partner with you in that.

Justin Yang:

Thank you. And yeah, I look forward to hearing more about this. I mean, I'm very excited to learn more, Rich. And thank you for all the work that you guys are doing in this area. And thank you to all the listeners that are interested. I mean, ultimately, we want to continue to lead the way, if you will, of making better products that can ultimately save lives for Americans as well as people around the world.

0:37:07

Rich Bendis:

Well, I want to thank our guest today on *BioTalk*. It's Justin Yang, who's the Catalyst Office Director of BARDA, Division of Research Innovation and Future Ventures. And to be honest with you, I think we almost need to talk to Justin on a quarterly basis because there's so many new things happening at BARDA, Justin. If you can get approvals to come on

regularly, we'll keep the listeners updated because it sounds like you've got new programs coming out on a regular basis, and we'd like to make them aware of them so that we can spread the word with you.

Justin Yang: Absolutely, man. Stay tuned. If you go to BARDA Industry Day, we're going to unveil two more programs at that time. But yeah, to keep up with the pace of innovation, we have to continuously find what's out there and pivot quickly.

Rich Bendis: Great. Send me information on the BARDA Innovation Day, and we'll put it in our newsletter and do some social media to help promote it for you.

Justin Yang: Thank you.

Rich Bendis: So, Justin, thank you very much for being on *BioTalk*. We'll talk to you soon.

0:38:03

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

End of recording