Welcome to LabNotes. I'm Joe Fetterman with Colliers Life Science real estate advisors and we're here today with Matt Hewitt. Matt is the Executive Director of Scientific Solutions at Charles River Labs. Matt, welcome to LabNotes.

Thank you Joe, thank you for having me.

Well, it's great to have you here. You and I've chatted about this before – we have some Birmingham, Alabama in common, and to top that out, much of your career unfolded right here in Philadelphia. Let's pause for a minute to establish your Philadelphia credits here.

Right, thank you. So I moved to Philadelphia in August of 2011 for a scientist position with a small startup that was focused at the time on the iteration of the airways and opioid-induced respiratory depression along with sleep apnea. I did small molecule development with them for several years before going back into immunology which is where my PhD is in. I worked at UPenn for a bit under Jim Wilson, running an immunology group for him and leading several dozen gener therapy programs. Once I left there, I took a quick break from Philly to move to Houston where I did a lot of cell therapy work. Ultimately, [I] came back to Philadelphia for several years where I worked for Lonza, helping them to build a new business unit which was focused on cell and gene therapy.

The exciting development here Matt, is that you're now over at Charles River Labs, and you are one of the guys that is making the cell and gene therapy programs happen there.

Yeah I know, it's been a really exciting time so I joined Charles River about 10 or 11 months ago to help integrate their cell and gene portfolio over the past two or three years. Charles River has undergone a significant transformation from an organization that was primarily focused on safety assessment, toxicology studies, and biological testing to a company which now has a concept of commercial cell and gene portfolio including things like antibody discovery, cell supply, target screening, a full CDMO of services from pre-phase one to commercial. When you include that with our existing biological testing to enable real-time product releases, wells of our safety assessment toxicology, we have a really nice portfolio that can accelerate and streamline cell and gene therapy programs for various people.

Matt, one of the things that you communicated is that in addition to overseeing operations at facilities, you're also one of the key guys that's advising executive leadership on where the field is going and staying ahead of that. What are the things that's causing you to look at to stay ahead and really position Charles River to be best suited for clients?

Right. Charles River does not do any therapeutic development ourselves, so when we look at the field, we have to look at it through a bit of a different lens. What are the key enablers that are coming to the field and what does that look like? I think for cell and gene specifically, the field is still fast evolving and we're still trying to find what works and what doesn't work. So when I look

at that and others look at that, we typically divide it into some buckets. We look at things like what are the key enabling technologies that help us advance the field? So you know for plasmid, there are a lot of off-the-shelf plasmid offerings that we will be coming out with shortly as well as viral vectors and producer and packaging cell lines. And then looking at cell therapy manufacturing, we already know there are some sensitives around the cost of manufacturing these cell therapies and so we're looking at placing– not that– definitely getting involved with different developers of technologies that we believe are promising to help lower manufacturing costs which have a direct impact on therapeutic costs, and then ultimately have an effect on patient adoption of these potentially curative therapies.

Matt, you just had a recent announcement about a new consortium that Charles River Labs is getting involved with. (https://www.businesswire.com/news/home/20220505005236/en/Multiply-Labs-Adds-Thermo-Fisher-Scientific-and-Charles-River-Laboratories-to-Its-Robotic-Manufacturing-Consortium)

So yesterday [April 21st], we announced with several others that we had joined a Consortium of Multiply Labs out in San Francisco. They are working to close and automate the cell therapy manufacturing process primarily using linear robotics, so we have joined the Consortium that includes Multiply Labs, UCSF, Cytiva as well as Thermo Fisher [Scientific Inc.] to bring that to life. And again, the intention here is to try to lower the manufacturing cost for these cell therapies such that we can get increased patient adoption as well as lower just the human needs that we have in these manufacturing processes. So as part of that consortium, Charles River is actually contributing some of the microbial testing equipment that we make, preliminary the Endosafe (https://www.criver.com/products-services/qc-microbial-solutions/endotoxin-testing/endotoxin-testing-systems/endosafe-nexgen-pts) which does antitoxin testing as well as our Celsis which does general sterility testing (https://www.criver.com/products-services/qc-microbial-solutions/microbial-detection/microbial-detection-instruments/celsis-advance-ii-system). We believe by combining efforts and collaborating across different disciplines that we can have a larger effect than if we were to go at this alone.

Well, thanks and then good luck with good luck with the new initiative. Thank you. Let's circle back to Philadelphia for a second. You really have a unique perspective on Philadelphia in the cell and gene therapy field and Philadelphia's place and also the trajectory. I'm curious if we can talk for a minute about, where you see the future for Philadelphia now you see Philadelphia as it measures up to some of the other important clusters. I'd like to hear what you're thinking about that.

Right, I think in general I think Philadelphia is well-positioned to continue to lead a lot of areas specifically in cell and gene. You know we have a great base there and in the institutions, whether we're talking about University of, Pennsylvania, Children's Hospital of Philadelphia, Drexel, Temple or Jefferson as well as Villanova, all to provide a great base to provide qualified

folks coming out of those institutions that can feed into a lot of the roles we're looking forward to advance these programs.

I think additionally, because of that, a lot of the innovations certainly can rise or seek ill of 19 as it was called when it was at Penn, you know the first autologous cell therapy that was approved in late 2017 against cancer. I mean, there is no… first is first, there's not another first. We really do have a feather in our cap there, I think so because of a lot of innovations that come out of Penn, we've seen various companies spin out of Penn. I think Philadelphia has done a good job in University City in building out a lot of the infrastructure that's needed, so you cannot once these companies come into existence, they become part of industry and can no longer live within UPenn or CHOP or anywhere else. So they need space. I think that the city and investors do a good job of anticipating and building out that space. The other thing about Philly is that we now have the first commercial cell therapy, but you know we had a Philadelphia company do the first commercial gene therapy as well. SPARK has spun out of CHOP and commercialized Externa against inherited retinal blindness. That was again, another big feather so I think it's a really unique place and now we see the first commercialized cell therapy come out of Philadelphia but also the first commercialized gene therapy. That has attracted a lot of people to the area which is good. Charles River invests in the area as well, we have a very large biologics testing facility just outside of Philadelphia in Malvern. So when we talk about doing biological testing or manufacturing cell banks for the work, that is a lot of times where that activity is happening. So you know we are big investors in the region.

Yeah, you know in the context of the other major clusters, we've talked a little bit about talent and the depth of the talent pool in Philadelphia. How do you see Philadelphia stacking up in terms of the ability to support the growth that all these clusters are seeing? How is that looking across the national landscape to you?

I think Philadelphia is in a good position primarily because they're not in a unique geographic location, where they don't have the ability to expand, and I think within the city there still is a lot of area to grow. You've seen up near Temple, out near University City, even outside the city with Jefferson and Villanova, where you know things can expand, we have room to grow, and we can also grow up. Not every city is as comfortable with air rights and building multi-story buildings, but I think Philadelphia is obviously. So I see that as a great plus. We're not limited then by the zoning requirements or folks not wanting these things near their yards. I'm sure there are still those people out there, but the point is that we have a populus as well as local and state governments which understand the criticality of expanding these industries because they do provide a lot of value to the state and the local communities as well as the patients that they're looking to serve.

Matt, we talked a little bit about Philadelphia as an emerging bioprocessing center and we've also talked about the idea that the demand for talent– not necessarily PhD talent but also talent on the floor– is going to increase as the facilities expand and you're seeing this in other markets. How do these Life Sciences clusters and Philadelphia in

particular keep up with the demand for folks on the floor? You are well trained to execute the manufacturing processes.

Right. I would say there are a couple avenues we can take. One of which is I would highly suggest that folks who are in a smaller biotech or medium-sized biotech and even potentially large pharma as we work with all segments of the field, reach out to folks like us that have capabilities and decades of experience in manufacturing these therapies. I will say it is in the grand scheme of things, easy as always in context of what the other activities are, but it is easy to build a facility and put equipment in it. It is quite hard to fill that facility with people and the expertise needed to manufacture those therapies. By coming to us, we can help you move through those steps and the programs of development, whether it be manufacturing at phase one, phase two in pivotal commercial, without the need to build your own facilities immediately and staff it with a bunch of people. I think on the other side, we talked earlier about the multiply consortium collaboration. I think one element we have to look at is how do we better automate manufacturing in general for cell and gene? What that will do in some aspects will decrease the number of people we may need for particular processes. I think there's a few steps. When you do that, there's a way, a progression when you go to clinic, so as you're going through and creating a value inflection point for a company, dosing that first patient, dosing that first cohort, getting into your phase one, that manufacturing process may look quite different from something that goes into late phase and into commercial. I think again we have the experience to guide you through that, but ultimately in commercial we need to automate better which reduces the number of people. I think we also need to have a conversation about what we are looking for in people that are going to be doing the work in the suites. Traditionally what we've done is air on the side of caution, and recruited folks with a minimum of a four-year degree. I think if we're going to truly scale manufacturing and to meet the needs of larger patient populations, solid tumors, and oncology, or if we get into auto-immune there are some quite large patient populations there, we're going to need to rethink the way– the qualifications of the folks we're bringing. I think there we need to have a conversation, does a four-year degree make sense? Do we go to a two-year degree? Do we need a degree at all? Do we need a technical certificate? Really what we're looking for is people that have the right attitude that can follow a standard operating procedure and take direction well.

That's really helpful commentary on that, Matt. I know we could talk all day, I know you're keeping a busy schedule and you've got a lot going on, so thank you for joining us on LabNotes. I look forward to talking again very soon.

Always happy to be on, thank you Joe again for having me. I appreciate the questions.