Filed by Lantheus Holdings, Inc.
Pursuant to Rule 425 of the Securities Act of 1933
and deemed filed pursuant to Rule 14a-12
of the Securities Exchange Act of 1934
Subject Company: Progenics Pharmaceuticals, Inc.
Commission File No.: 000 – 23143

The following are excerpts from the transcript for Lantheus Holdings, Inc.'s presentation at the SVB Leerink 9th Annual Global Healthcare Conference on February 26, 2020. This transcript was prepared by a third party and has not been independently verified and may contain errors.

. .

<<Mary Anne Heino, President and Chief Executive Officer>>

Thank you and good morning everyone. I'll start with the necessary Safe Harbor statements especially given where we are in our timeline towards a transaction with Progenics. Obviously some of what we'll reference, they may include forward-looking statements. I'd ask that you will recognize that and that you reference Safe Harbor statements when you think about your transactions about your possible investments in the company. And I'll offer this here, but I'll also point you to our website to read our cautionary statement regarding forward-looking statements that I possibly will make during our discussion this morning.

What I'd like to do is first speak for a few minutes about who we are Lantheus at this time. And again, it's a little bit of an odd time because we are in the midst of working towards a transaction that will very much change who we are and what we look like. And I'll talk to that as well when we talk about the transaction and what it looks like against the backdrop of the strategic vision of the company and where we're really heading as a company because I think that's ultimately what's of much more interest to our current shareholder base and what our shareholder base will be in the future.

. . .

I'm going to switch now and talk a little bit about the transaction that we are in the midst of. And this is our potential acquisition of Progenics. We first announced the transaction on October 2. We more recently announced an amended set of terms related to that transaction. I'll first speak to what the strategy is and why we see this as a compelling move for Lantheus. As I discussed, we are and have, since our inception as a company, been in the field of nuclear medicine. Specifically, the field of nuclear medicine has – was born and has for most of its own legacy been based around diagnostic and that is the use of radioisotopes for their properties in being able to image either organs – organ systems or parts of the body.

And that literally is because as radioisotopes exist, they decay and they give off ions and those ions are used under certain types of equipment. The properties are used to capture images of where they exist and to create images of the body parts in which they exist. Lantheus, as I mentioned, has a longstanding history of development of products that used for those diagnostic capabilities. What's been happening more recently in life sciences is the appreciation of the use of radioisotopes, not only for their diagnostic capabilities but also for interventional and therapeutic capabilities because the same way you can harness the diagnostic capability of a radioisotope, you can also marry that radioisotope to either a fragment, a peptide, a monoclonal antibody or other agents and use the same properties of either release of energy or of specificity for the kind of – I would say almost the tendency of that radioisotope to seek out a certain body part and then you can intervene and use that property therapeutically.

That is the strategic vision of Lantheus to use our longstanding capabilities and expertise around radioisotopes and now go with where the market is going around appreciation of those capabilities to be therapeutically an interventional and take our own capability for isotopes and use it in M&A to address it in the marketplace. And that is what Progenics represented to us. The Progenics portfolio includes radio isotopes, not only in therapeutic use but also in diagnostic use, and it is the more advanced radioisotopes that are being applied here. So these are now radioisotopes such as lutetium and iodine rather than the more legacy isotopes of molybdenum and gallium. That is what we see as the compelling rationale for taking what is their portfolio and applying our excellence, longstanding excellence, I would say, in commercial execution, in manufacturing and operations and marrying the two companies together to go out and bring the entire portfolio and I would say then an expanded portfolio into the marketplace.

As I mentioned, we first announced the transaction on October 2, at that time Progenics as a company was embroiled in some shareholder related activities that was driven by activist activity. As a result of those activities in a consent solicitation, five of seven board members were ultimately replaced. The new board was reconstituted as of early November and we've been interacting with the new board whose – I think fair to say, their mandate as they came in was to evaluate the transaction that had been announced with Lantheus as well as to evaluate other potential options for Progenics as a company. Over the course of the what has been the period since then, we've interacted with that board and the result of that interaction has been what was announced last week, which is an amended and restated merger agreement with slightly different terms, which we are still confident represents great value for both sets of shareholders.

Those terms received the unanimous approval of both sets of – of both boards of both companies. And we look forward now to moving forward on the transaction process, which we feel will lead to – and hopefully lead to positive shareholder vote by early first – the early part of the second quarter, so we can close this transaction and move forward with our strategic intent for the combination of these two companies. We see in the portfolio both companies, great value, appreciations that we feel we can drive forward. We – as an executive team, our intent is to run the company the way that we've run Lantheus since going public, which is for – looking for value extraction and looking for very prudent use of capital, which we think has been the hallmarks of how we've run the company.

I'll close by with just a slide presentation piece by offering a view into what we see as the areas of strategic focus for Lantheus 2.0, which is what we'll call the – referred to as the combined company. First and foremost, we remain very committed to accelerating revenue growth. I think we've demonstrated that over the past several years with the revenue growth we have demonstrated year-over-year with a portfolio that we have, not only revenue at the top-line but then also profitability on the bottom line. We see this transaction, this first transaction and some of the other things that we've announced over this past year, as our ability to continually diversify our portfolio, not only into diagnostics but as I said also into radio pharmaceuticals, into radio therapeutics and that is to remain a strong focus for us.

Also with this particular transaction in which some of the other announcements we've made, we feel we have the ability to continually to raise our margin profile of the products that we're bringing into the company and that is also a strong goal for us. What I show you on the right hand side of the slide, here is where we see the different areas of focus for the company. Microbubbles, which is what DEFINITY is as an ultrasound contrast agent will remain a strategic focus of our company. We have worldwide expertise, not only in ultrasound contrast agents used as a microbubble, but in all uses of microbubbles.

. . .

<<Ami Fadia, Analyst, SVB Leerink>>

Can you talk about the Progenics pipeline and what you find to be most exciting out of that pipeline and maybe highlight for us what you think is least appreciated by in those communities?

<<Mary Anne Heino, President and Chief Executive Officer>>

Well I won't speak to the investor community because I think that that market works on its own dynamics, but I certainly will speak to as we, completed our diligence and as we continue to go through integration. I think there's two assets that are very exciting to us. And, I think the first I'll speak to is PyL.

PyL is a PSMA based diagnostic agent that just readout on the second Phase 3 trial on and was announced on December 23. And this will be a whole new agent for the United States marketplace, a first-in-class, treating and it will address prostate cancer. So, currently prostate cancer is almost indirectly diagnosed from a PSMA perspective.

PSMA which is prostate-specific membrane antigen is a direct validated target that exists on the cell surface of prostate cancer cells. So, it's a direct validated target to identify existing cancer cells in unfortunately men who have prostate cancer and currently what you, what happens frequently in prostate cancer is that men who – for whom that they believe prostate cancer is still subject only to being contained within the prostate gland, undergo what's called radical prostatectomy for removal of the prostate gland with the clinicians hope that for having been contained there, it's almost a curative approach to treating the cancer.

But unfortunately it has not been contained to the prostate gland, but it's hard to diagnose that it is not because it's very small amounts of free floating cancer cells that are hard to diagnose under biopsy if they are minute and free floating in the rest of the body.

With the advent of PyL, you can offer a diagnostic where for injecting PyL you can do whole body imaging and detect whether there is free-floating minute amounts of free floating cancer cells in the rest of the body. That is just simply not possible with biopsy, you cannot subject a patient to, multiple biopsies across the body.

And that's what becomes possible with PyL. So, you have this whole class of patients right now who present odd kind of, I would say odd clinical symptoms to physicians because they present back with what's called rising PSA levels, which after prostatectomy they're still demonstrating signs that there's evidence of cancer in their body, but it shouldn't be there in fact if prostatectomy was curative. So that's one class of patients for whom this will be an important diagnostic.

There's also the potential based on what was the first Phase 3 trial that you can use PSMA diagnostics early in a prostate cancer patient's diagnostic journey to very early diagnose that there is presence of metastatic disease. And what that allows is for earlier more aggressive or I'll say appropriate treatment which then leads to a just much better outcome for the patient. And given the prevalence of prostate cancer, unfortunately as a cancer diagnosis, that just opens up more treatment options and better patient management or is it for both clinicians and unfortunately also not – in this case, fortunately for the patient to a service. So we're very excited.

In the – what we've seen already in worldwide experiences when the availability of a PSMA based agent diagnostic agent became available in Europe. And this was just in the clinical trials, the European Urological Association changed their guidelines to say in the presence and availability of a PSMA based diagnostics. The guidelines recommend that that become the PSD diagnostic agent of choice. This is when it was only available in clinical use before an agent was approved. There's still not a EMA approved agent in Europe, already in the U.S. market last Friday, ASCO, the American Society of Clinical Oncologists have already updated their guidelines to say that they will favor the use of a PSMA based guideline in certain sub-patient populations when approved for the same reason because it's a – as a validated target, it really does give physicians and clinicians that much more definitive ways to approach certain patient groups. So we're very excited about that as an asset.

<<Ami Fadia, Analyst, SVB Leerink>>

Which patient groups do you think is more compelling to you this more, patients sort of been on some type of common therapy for a couple of years and you're trying to maybe drive early detection of metastatic disease? Or do you think the value proposition is equally compelling for a newly diagnosed patient?

<<Mary Anne Heino, President and Chief Executive Officer>>

I think it's a different value proposition for the two groups. But I think it's compelling for both. Because I think, the earlier that you can catch disease in any patient, that there's a, of course a compelling value proposition but I think for clinicians, the conundrum of seeing rising PSA levels in patients whom you think you've offered a curative surgical process is a conundrum. And in this case, what PSMA allows you to do is to confirm that you're not seeing that you, in fact there is cancer there. That is was missed.

<<Ami Fadia, Analyst, SVB Leerink>>

Catch it in an earlier window.

<<Mary Anne Heino, President and Chief Executive Officer>>

No. In that case, you're confirming that you're not looking at a patient who is in fact that other tests would indicate is cancer free. So, you're not looking – it gives you a true positive instead of what you're might believe is a false negative. So, I think that is a value proposition that a patient and a physician also then it gives them the indication that there is something there to treat.

<<Ami Fadia, Analyst, SVB Leerink>>

Well let's talk about a AZEDRA, that was other one you said you were excited about what is sort of that the market opportunity there, help us understand the value proposition.

<<Mary Anne Heino, President and Chief Executive Officer>>

So, AZEDRA treats a small population, but here again, this is an important population that unfortunately does not have many treatment options in the market today, rare disease as folks might note, I just announced on our earnings call the other day that we've just placed a new Chief Commercial Officer, Paul Blanchfield and Paul not by coincidence brings deep expertise in rare disease.

And my optimism about AZEDRA I'll say is that the, what's really critical there is that as you look out to the customer, what I call it, the customer facing structure in the market, it's what's really important when it comes to rare diseases is that you have the right customer facing structure. Because for those patients you're not, it's not the simple commercial structure that you see. And I'll say in pharma or in some of the sales models that patient is part, it needs to be considered as part of a total treatment team.

And for that patient co-ordination of benefits, co-ordination of product delivery, co-ordination of total treatment and the logistics associated with it are so much different than a, so many other disease processes. And that's where I think we may have the opportunity coming in with a new look and a new level of expertise to take a look at what's possible there and put some fresh energy behind what value can be unlocked there. And I think there's also other indications for AZEDRA that might also be considered that we're, that particular product might also serve patient populations and we're very eager to look at those any well.

. . .

Q&A

- <Q>: PyL technology can it be used in any other type of cancers?
- <A Mary Anne Heino>: So there are other cancers for which PSMA is expressed, but the most direct expression is for prostate cancer. I will also note in the Progenics pipeline, there is also a PSMA based therapeutic, a prostate cancer therapeutic 1095 and there are also in the under development in the market, other radio therapeutic prostate cancers under development.
- <Q>: [Question Inaudible] is very specific to PSMA.
- <A Mary Anne Heino>: PSMA. Yes, yes, there are in literature, there are other, there are other cancers for which PSMA is expressed, but the most direct is prostate

. . .

- <Q Ami Fadia>: Maybe my next question is for Bob. As we thinks about the Progenics transactions, can you help us understand how you think about EBITDA and EPS progression. And it also talks about kind of your assumptions for synergies from the transaction.
- <A Robert Marshall>: Sure. So, I mean, as a profile of the new company, we would expect double-digit revenue growth. The portfolio of revenues that we're bringing in, as Mary Anne pointed out before are margin accretive to the existing standalone Lantheus gross margin profile. So as we look out over the next four or five years, we do expect one as we, in year one we do absorb what is a fairly heavy cash OpEx type burn that we would integrate into our positive metrics. And, but right after year one, we really do see an acceleration from there into year two to year three, year four.

The deal is EBITDA accretive in the second year and then becomes on a GAAP, a non-GAAP adjusted EPS basis accretive in year three. So, we're very excited about that opportunity. The other thing that we see is a metric that also is very near and dear is, is in terms of cash flow. This combination will be very enhancing to free cash flow, particularly as you get out into years three, four, five, six. There are certain aspects of their balance sheet and tax positions that help the combined company, particularly as we become increasingly profitable on the front around synergies. So, we are expecting around \$20 million worth of synergies. We've put in place already an integration management office that has been working really hard, sort of cross functionally with the Progenics team to identify specifically how we're going to achieve those synergy targets. And we can get those in the first two years as well. So those are the things that will drive us and accelerate the growth both from revenue and a margin profile.

Important Information For Investors And Stockholders

This document does not constitute an offer to sell or the solicitation of an offer to buy any securities or a solicitation of any vote or approval in any jurisdiction in which such offer, solicitation or sale would be unlawful prior to appropriate registration or qualification under the securities laws of such jurisdiction. No offering of securities shall be made except by means of a prospectus meeting the requirements of Section 10 of the U.S. Securities Act of 1933, as amended.

In connection with the proposed transaction, Lantheus Holdings filed with the Securities and Exchange Commission ("SEC") a registration statement on Form S-4 on November 12, 2019 that includes a joint proxy statement of Lantheus Holdings and Progenics that also constitutes a preliminary prospectus of Lantheus Holdings. The registration statement has not yet become effective. After the registration statement is declared effective by the SEC, a definitive joint proxy statement/prospectus will be mailed to stockholders of Lantheus Holdings and Progenics. INVESTORS AND SECURITY HOLDERS OF LANTHEUS HOLDINGS AND PROGENICS ARE STRONGLY ENCOURAGED TO READ THE JOINT PROXY STATEMENT/PROSPECTUS AND OTHER DOCUMENTS THAT ARE FILED OR WILL BE FILED WITH THE SEC CAREFULLY AND IN THEIR ENTIRETY BECAUSE THEY CONTAIN OR WILL CONTAIN IMPORTANT INFORMATION. Investors and security holders are able to obtain free copies of the registration statement and the joint proxy statement/prospectus and other documents filed with the SEC by Lantheus Holdings or Progenics through the website maintained by the SEC at https://www.sec.gov.

Copies of the documents filed with the SEC by Lantheus Holdings are or will also be available free of charge on Lantheus Holdings' website at https://www.lantheus.com/ or by contacting Lantheus Holdings' Investor Relations Department by email at ir@lantheus.com or by phone at (978) 671-8001. Copies of the documents filed with the SEC by Progenics are or will also be available free of charge on Progenics' internet website at https://www.progenics.com/ or by contacting Progenics' Investor Relations Department by email at mdowns@progenics.com or by phone at (646) 975-2533.

Certain Information Regarding Participants

Lantheus Holdings, Progenics, and their respective directors and executive officers may be considered participants in the solicitation of proxies in connection with the proposed transaction. Information about the directors and executive officers of Lantheus Holdings is set forth in its Annual Report on Form 10-K for the year ended December 31, 2019, which was filed with the SEC on February 25, 2020, its definitive proxy statement for its 2019 annual meeting of stockholders, which was filed with the SEC on March 15, 2019, and its Current Report on Form 8-K, which was filed with the SEC on March 25, 2019. Other information regarding the participants of Lantheus Holdings in the proxy solicitation and a description of their direct and indirect interests, by security holdings or otherwise, will be contained in the joint proxy statement/prospectus and other relevant materials to be filed with the SEC regarding the proposed transaction when they become available.

Information about the directors and executive officers of Progenics is set forth in its Annual Report on Form 10-K for the year ended December 31, 2018, which was filed with the SEC on March 15, 2019 and amended on April 30, 2019, its definitive proxy statement for its 2019 annual meeting of stockholders, which was filed with the SEC on May 30, 2019, and its Current Report on Form 8-K, which was filed with the SEC on November 21, 2019. Other information regarding the participants of Progenics in the proxy solicitations and a description of their direct and indirect interests, by security holdings or otherwise, will be contained in the joint proxy statement/prospectus and other relevant materials to be filed with the SEC regarding the proposed transaction when they become available. You may obtain these documents (when they become available) free of charge through the website maintained by the SEC at https://www.sec.gov and from Investor Relations at Lantheus Holdings or Progenics as described above.

Cautionary Statement Regarding Forward-Looking Statements

This document contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 that are subject to risks and uncertainties and are made pursuant to the safe harbor provisions of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Such statements are based upon current plans, estimates and expectations that are subject to various risks and uncertainties. The inclusion of forward-looking statements should not be regarded as a representation that such plans, estimates and expectations will be achieved. Words such as "anticipate," "expect," "project," "intend," "believe," "may," "will," "should," "plan," "could," "target," "contemplate," "estimate," "predict," "potential," "opportunity," "creates" and words and terms of similar substance used in connection with any discussion of future plans, actions or events identify forward-looking statements. All statements, other than historical facts, including the expected timing of the closing of the merger; the ability of the parties to complete the merger considering the various closing conditions; the expected benefits of the merger, such as efficiencies, cost savings, synergies, revenue growth, creating shareholder value, growth potential, market profile, enhanced competitive position, and financial strength and flexibility; the competitive ability and position of the combined company; and any assumptions underlying any of the foregoing, are forward-looking statements. Important factors that could cause actual results to differ materially from Lantheus Holdings' and Progenics' plans, estimates or expectations could include, but are not limited to: (i) Lantheus Holdings or Progenics may be unable to obtain stockholder approval as required for the merger; (ii) conditions to the closing of the merger may not be satisfied; (iii) the merger may involve unexpected costs, liabilities or delays; (iv) the effect of the announcement of the merger on the ability of Lantheus Holdings or Progenics to retain and hire key personnel and maintain relationships with customers, suppliers and others with whom Lantheus Holdings or Progenics does business, or on Lantheus Holdings' or Progenics' operating results and business generally; (v) Lantheus Holdings' or Progenics' respective businesses may suffer as a result of

uncertainty surrounding the merger and disruption of management's attention due to the merger; (vi) the outcome of any legal proceedings related to the merger; (vii) Lantheus Holdings or Progenics may be adversely affected by other economic, business, and/or competitive factors; (viii) the occurrence of any event, change or other circumstances that could give rise to the termination of the merger agreement; (ix) risks that the merger disrupts current plans and operations and the potential difficulties in employee retention as a result of the merger; (x) the risk that Lantheus Holdings or Progenics may be unable to obtain governmental and regulatory approvals required for the transaction, or that required governmental and regulatory approvals may delay the transaction or result in the imposition of conditions that could reduce the anticipated benefits from the proposed transaction or cause the parties to abandon the proposed transaction; (xi) risks that the anticipated benefits of the merger or other commercial opportunities may otherwise not be fully realized or may take longer to realize than expected; (xii) the impact of legislative, regulatory, competitive and technological changes; (xiii) expectations for future clinical trials, the timing and potential outcomes of clinical studies and interactions with regulatory authorities; and (xiv) other risks to the consummation of the merger, including the risk that the merger will not be consummated within the expected time period or at all. Additional factors that may affect the future results of Lantheus Holdings and Progenics are set forth in their respective filings with the SEC, including each of Lantheus Holdings' and Progenics' most recently filed Annual Report on Form 10-K, subsequent Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and other filings with the SEC, which are available on the SEC's website at www.sec.gov. Readers are urged to consider these factors carefully in evaluating these forward-looking statements, and not to place undue reliance on any forward-looking statements. Readers should also carefully review the risk factors described in other documents that Lantheus Holdings and Progenics file from time to time with the SEC. The forward-looking statements in this document speak only as of the date of these materials. Except as required by law, Lantheus Holdings and Progenics assume no obligation to update or revise these forward-looking statements for any reason, even if new information becomes available in the future.