Lexagene Holdings Inc

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LexaGene's CEO takes us through the path to commericalization for unique pathogen detection system

LexaGene Holdings Inc (CVE:LXG) (OTCMKTS:LXXGF) was founded in late 2016. At the time, CEO Jack Regan had a vision and two licensed, critical patents from Lawrence Livermore National Laboratory. In the last two and a half years, Regan and his team raised US$13.5 million and built a unique company anchored by experienced staff. Today, LexaGene's technology is enabling faster, easier pathogen detection. Regan is confident that commercialization is right around the corner. In this interview, the CEO tells Proactive why he founded the company, how it is targeting a multimillion-dollar underserved market and where he sees LexaGene heading in the future.

Can you give us give us some insight into to the origin of LexaGene?

I studied influenza during my doctorate, which is arguably one of the more deadly pathogens of all time. After I graduated I went to work at Lawrence Livermore National Laboratory, where I had to go through such a rigorous security clearance program that I thought the US government was going to ask me to develop a bioweapon. Fortunately, instead they asked me to lead a team developing advanced technology to provide better defense against a biological attack.

The assembled team developed an automated instrument, which was funded by the Department of Homeland Security (DHS), to rapidly detect agents like smallpox, anthrax, plague - any other pathogens that can be easily weaponized. The instrument was designed to be 'autonomous', which means it can run around the clock, screening the air for threatening bacteria released from a dirty-bomb without any direct interaction from scientists and engineers. We called the instrument, the Autonomous Pathogen Detection System (APDS). In autonomous mode, it could collect and analyze the air found in transit stations and other high-risk areas for a week, and it would transmit a report back to headquarters every 3 hours on the findings. After we completed the validation studies, the instrument was adopted by the DHS to be part of their BioWatch program.

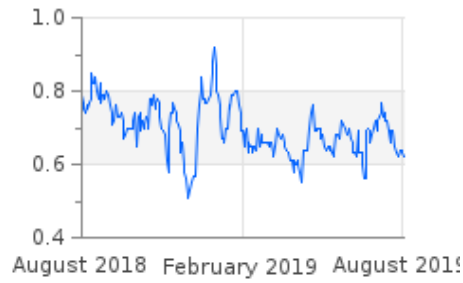
Despite the successes of this technology, I felt that it could be improved, so I set out to design a new instrument and came up with a design that would improve the instrument's sensitivity, speed, throughput, and multiplexing capability. These novel improvements were capture in a patent application that has since by granted by the US Patent and Trademark Office (and subsequently licensed by LexaGene).

After the patents were issued, I met Daryl Rebeck, who helped me execute a reverse takeover agreement of a company listed on the TSX Venture Exchange. Soon afterwards, Daryl joined me at LexaGene to help build this company. Bit by bit we started accumulating capital, closing five financings totaling US$13.5 million. We've grown the company to 21 employees and have drastically advanced the technology as we are now beta testing the technology at prospective customer sites.

Price: C$0.63

Market Cap: C$44360500M

1 Year Share Price Graph



Share Information

Code:	LXG	
Listing:	TSX-V	
52 week	**High**	**Low**
	C$0.93	**C$0.50**
Sector:	**Health Care, Equipment & Services [T3]**	
Website:	**www.lexagene.com**	

Company Synopsis:

LexaGene is a biotechnology company developing a fully automated pathogen detection platform for use at the site of sample collection, which offers unprecedented ease-of-use, sensitivity, and breadth of pathogen detection.

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Why did you decide to focus on veterinary diagnostics and food safety testing?

We wanted to target underserved markets. Our primary market is veterinary diagnostics, followed closely by food safety. The companion animal testing market is regulated by the US Department of Agriculture (USDA), where the requirements are more easily met than requirements from the Food and Drug Adminstration (FDA) for human clinical diagnostics. The lower regulatory hurdles in this market will allow us to more quickly enter the market and start generating revenue. Eventually we'd like to go to human clinical diagnostics but for right now we're concentrating on the veterinary market.

We are also developing tests for food safety testing. Our technology is unique in that our microfluidic instrument uses such small amounts of test reagents, and our plastic consumable is so low cost to manufacture that we can provide very high-quality testing for a low price. This means we can service the price-sensitive food testing market, where cost per sample is low but throughput is very high. Other automated molecular testing technologies have costs that are up to 15 times greater than ours, making them prohibitively expensive for food safety testing. As a result, these technologies are only used in human clinical diagnostics where high prices can be charged.

What does 'open-access' mean, and why is it important?

In human clinical diagnostics all current suppliers of easy-to-use automated tests for pathogens have instruments that are closed-access, meaning the manufacturer has a very expensive cartridge that is embedded with all the reagents required to run the tests. Although our instrument is not yet FDA cleared, we are developing a novel technology that is open-access, which will allow end users to configure the instrument to detect any genetic sequence of interest. This is important because pathogens evolve and having the ability to rapidly respond to a new threat potential could save lives.

What does the path to commercialization look like?

We are currently beta testing our technology with prospective customers to make sure the technology is meeting their needs. We will collect feedback from the beta testers and in the fall, we will lock down the design of our commercial system. We then will start the manufacturing process, which will take a couple of months due to some custom parts that have long lead times. Our expectation is to be commercial by the end of Q1 2020.

What is your longer term vision for LexaGene?

I got into diagnostics to make an impact and affect people's lives. I decided to start this company because I felt there was a genuine need for the technology, and that I was the best person to bring it to market. With that in mind, my goal for the technology is to have the biggest impact possible. The company's mission statement is 'Provide technology that improves health outcomes and prevents illness from spreading.' I look forward to the day when LexaGene's product helps save a life. Now that we are in beta testing, this day may come very quickly. When a life-saving test is run that is attributed to LexaGene's technology I'll have a tremendous about of gratification.

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