

Interview: Stefan Larson CEO, Northern Biologics, Canada



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Stefan Larson, CEO of Northern Biologics, explains the major milestones for Northern Biologics over the past three years, his personal motivation for starting a biotech company, their collaboration with Celgene, and his thoughts on the strengths and areas for growth within the Canadian biotech industry.

Stefan, three years into the establishment of Northern Biologics, could you share some of the main highlights for the company?

Incubating and launching an early-stage drug discovery biotech in Canada with the backing of a venture capital firm like Versant Ventures and a strong pharma partner like Celgene allowed us to set up Northern Biologics for success right from day one. This was an exciting part of our story right from the beginning.

Being able to launch a company with USD 35 million on day one was also substantial for us as a lot of investment is needed to discover and develop a drug today, and having a well-funded and well-backed biotech company is critical.

Our acquisition of Mosaic Biomedicals in the summer of 2016 was a transformative event for us. We had previously been a very research and drug discovery-focused company, so acquiring a novel antibody on the cusp of a clinical trial really accelerated our progress as a company. With the hard work of the past year, we are now on the verge of filing our IND for this antibody, and enter clinical trials next year. We expect to dose our first patient in January 2018.

What motivated you to take the plunge to start your own company?

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I am a scientist by training with a PhD in Biophysics from Stanford University. When I returned to Canada, I spent many years as a management consultant but I always knew that I wanted to run a company eventually. I then ran a small medical device company for many years but my true love was always biotech, especially protein therapeutics, which includes antibodies.

During my consulting career, I had the opportunity to work with Big Pharma clients on all sorts of projects, including very high-profile, strategic projects with close contact with very senior executives. As exciting as that was, it became clear that Big Pharma is bureaucratic and slow-moving. In contrast, biotech companies are small, nimble, invest just enough money to accomplish great things, and can move very quickly.

As a very people-driven leader, the opportunity to work directly with a team of 30 scientists and entrepreneurs on a daily basis and get into the weeds of making decisions was also very appealing.

Four years ago, I had the opportunity to meet some of the team at Versant Ventures, who had a vision to do more company creation and invest more venture capital to bring scientific discoveries to life in Canada. I became very excited about that vision. We clearly had a shared passion, and I was able to join Versant as an Entrepreneur-in-Residence, which was a perfect fit for me. My mandate was to scour the academic landscape in Canada for top scientists, top programs and the most innovative science, and build a company around it.

Speaking of the Celgene partnership, what led to this collaboration between Celgene and Northern Biologics?

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Celgene is probably one of the most dynamic deal makers within the biotech and pharma industry, having crafted a strategy of externalizing their R&D in collaboration with biotech for over a decade. Celgene had a very strong, existing relationship with Versant so when we started to put the concept of Northern Biologics together, Celgene was right there and they were very interested in the concept. It was a very natural progression and the fit was perfect in terms of how they source innovation and in terms of the backing we were looking for.

Northern Biologics works in the area of immuno-oncology, which is one of the hottest areas within the industry today. What differentiates Northern Biologics from other biotech companies in this field?

Firstly, almost from day one, we initiated a global search for the most promising, most exciting and most novel oncology assets. We have sourced and evaluated at least 250 different pre-clinical oncology antibody programs from the US, Europe, Japan, Australia, Israel, and so on, be it from academic institutes, small biotechs or Big Pharma. In the past two years, we have done a number of deals to build a robust portfolio with the best assets we could find globally.

Secondly, we have decided very specifically to focus on first-in-class antibodies. We have tried to find the sweet spot in terms of being the first antibody in the clinic going after a new target without necessarily exploring brand new biology on the cutting edge of science. That meant focusing on novel targets in biological pathways within immuno-oncology that already had some clinical validation or a significant amount of pre-clinical validation — not just from one laboratory but from several leading laboratories around the world. We wanted to have the confidence that even as we

develop a first-in-class drug against this target, the biology of the pathway is understood, without us needing to commit to years and years of scientific research merely to understand that aspect.

Given that you were sourcing from a global market, what made Canada and specifically Toronto the ideal location to set up such a biotech company?

Frankly, I do not think any specific country is a better location than another for a biotech company. There has obviously been great success in several clusters within the US like Boston and the Bay Area, as well as within Europe.

In general, however, Canada happens to be a great country in which to start any business. Toronto in particular is the fourth-largest city in North America, with easily accessible transport links, and a highly educated population. We are located in the MaRS Discovery District where you can find literally thousands of PhDs within a one-kilometer radius, which facilitates the recruitment of strong, talented scientists.

The multi-cultural diversity in Canada, especially Toronto, is also a huge strength. Our 30-person company speaks around ten different languages. It's like working in the United Nations, and that diversity injects exciting dynamics and personalities.

Andrew Casey from BIOTECanada has said this is the most thrilling period for the Canadian biotech sector in the past 12 years. How have you seen the Canadian biotech environment evolve?

There is a huge amount of world-class academic science and research taking place in Canada. Through entities like the National Research Council (NRC) and the Canadian Institutes of Health Research (CIHR), an enormous amount of government funding goes to feeding that academic discovery engine.

We also have a significant number of Big Pharma affiliates in Canada, some of which have significant R&D presence here, but not nearly close to the size of their activities in Europe or the US.

Between these two, you have the venture-backed biotech companies like Northern Biologics, who are translating these academic discoveries into real drug development. I believe that is where the excitement is. This is where we are seeing a lot of activity.

There has been a huge increase in the amount of capital invested in Canadian companies, particularly at the critical Series A financing stage. We are seeing more companies being created. In particular, over the past few years, many of the global blue chip biotech VC firms have really started to take Canada seriously. Versant was one of the early firms that came to Canada and saw the potential here. Canadian biotech success stories like Clementia, Turnstone Biologics and Zymeworks are now building investor syndicates comprising not just smaller, Canadian VCs but many of the large, global, typically US-based VCs. Along with capital, this has also brought a huge amount of experience, because these are VCs that have built dozens of billion-dollar companies and taken them public. Hopefully, they will leverage that expertise to grow their Canadian portfolio companies into truly global success stories.

We have heard that the Canadian stereotype of being too humble can be an impediment. What do you see as some of the challenges Canadian biotech is facing?

I am a huge advocate that the heart of true VC-based biotech lies in a combination of highly entrepreneurial academic scientists and highly experienced drug development and management teams. Bringing that together with strong financial backing from top-tier VCs is where the magic

happens.

Encouragingly, I have seen more entrepreneurial scientists developing within the Canadian academic landscape. It is no longer taboo for scientists or PhD students to say that they want to start their own company or to talk about VC. Speaking to the young PIs here, I can sense a lot of excitement about starting a company, even if they do not necessarily know what it means or how to go about doing it. This was not the case 20 years ago.

Our weakest link is the industry-experienced drug developers and management teams. We need many more of the serial entrepreneur-type that loves to build and sell companies and are on their third or fourth company! It is a bit of a chicken-and-egg problem where there just has not been the critical mass of successful biotech or pharma R&D organizations to produce these people in Canada. Canada does not have an anchor innovative pharma or biotech company, notably.

A big lever the Canadian biotech industry should focus on is recruiting international talent into Canada. It is great that Prime Minister Trudeau has a very pro-immigration policy, which has always been one of the greatest strengths of Canada as a nation. Canada as a country is already quite attractive for foreigners and we certainly could leverage that further. Our colleagues in the tech industry have been much more proactive on this front, and in fact, through their lobbying efforts, they have effected policy changes, including an expedited work permit program called "Global Talent Stream" that shortens the average processing time from three months to two weeks for certain areas.

At the same time, many Canadian companies, both biotech and pharma, have been acquired by international companies. Is this detrimental or positive in terms of building the biotech landscape?

This is a recurring debate within the biotech industry here. I personally see it as hugely positive. Many people lament the fact that we build all these cool companies that are then bought by other companies outside Canada, so they never grow into the anchor companies we want to see. But the reality is that being sold to Big Pharma is already a stunning success story, because it means that Canadians have created something of real value that the global market is interested in! It also means a huge amount of capital being returned to shareholders and investors, which keeps the whole biotech ecosystem running.

I sincerely believe that eventually, there will be a Canadian company that will refuse to sell and grow to be an anchor tenant of the biotech industry. But until then, we should be realistic and celebrate the success stories we do have. I certainly do not see it as a failure on our part that we lack a global pharma company.

On a more personal note, what is your vision for Northern Biologics?

As I mentioned, launching our first clinical trial in 2018 will be a huge milestone for us. We also have several other candidates in our pipeline and we are targeting to get at least one or two of those into the clinic by 2019. We want to have several developing drugs in our pipeline. This is part of what drives us: getting innovative drugs into the clinic because it means getting closer to really helping patients.

We are still actively sourcing and evaluating new programs. I would not be surprised if we do one or two more deals in the next two years.

I really want us to grow into a globally successful venture-backed biotech company. Someday, we will either take the company public or be acquired, but who knows what the future will hold! As long

as we are building a company with several innovative drugs in the pipeline, clinical trials running, and on track to a billion-dollar market capitalization, that is the definition of biotech success.

What advice would you give to young entrepreneurs looking to start their own biotech company?

You must dream big and you have to think globally. No matter where you are, look for assets and partners and talents from all around the world. Finally, do not be afraid to ask for a lot of capital, raise a lot of money, and build large investor syndicates because that is what being a successful biotech company requires.

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