

OncXerna Therapeutics is advancing state-of-the-art Precision Medicine to dramatically Improve the Lives of People with Cancer



**Laura E. Benjamin, PhD
Founder and CEO**

OncXerna Therapeutics, Inc.

**Interview conducted by:
Bud Wayne, Editorial Executive
CEO CFO Magazine**

CEO CFO: *Dr. Benjamin, before starting OncXerna Therapeutics, Inc. in 2018 you were a vice president in oncology in Eli Lilly where you led cancer discovery and transitional discovery teams. Why the decision to move in that direction and start OncXerna?*

Dr. Benjamin: Even before I was at Eli Lilly, I was an academic scientist who focused on cancer biology. I had a long-time passion for understanding how to identify the right patients for cancer treatment which is one of the reasons I left academics and went into industry to begin with.

What motivated me to leave pharmaceuticals and found the company was really the desire to focus very deeply on identifying patients for the right therapies, in particular, for therapies that were not targeting oncogenes or driver genes that we could identify through DNA mutations. I saw this as the next challenge in precision medicine: how to match patients to therapy when we do not understand their underlying DNA drivers.

CEO CFO: *Precision medicine is very important today in discovery and helping patients. On your website it says that you are ushering a new era of precision medicine. In general, what is new compared to what was being done five years ago?*

Dr. Benjamin: In a nutshell, precision medicine has focused on the very important advances that were made after we had the ability to sequence the genome of a cancer. It has largely focused on understanding the DNA mutations that drive cancer and developing drugs around them, but only 10% of cancer patients have targetable genetic mutations that can be treated with current precision medicines. I think the future is to look beyond the DNA mutations and instead focus on RNA to describe the biology of a person's cancer in order to bring the right treatment to the right patient.

CEO CFO: *We hear a lot about precision medicine these days of course. Why is that so important in cancer, particularly?*

Dr. Benjamin: A cancer patient who is undergoing treatment has a very limited life opportunity in front of them, especially in the metastatic setting. Therefore, it is really important for us to do everything that we can do to give each patient the drug that will give them the best opportunity for the longest life. That is what precision medicine is about. The idea that you treat a patient with any drug, not knowing whether or not that is the best drug for that patient, is just unthinkable.

CEO CFO: *Your focus is on messenger RNA, mRNA, rather than DNA mutations in cancer. Would you explain the difference between the two and why your approach can be more effective?*

Dr. Benjamin: It goes back to the fundamentals of molecular biology. In each cell of your body you have a full complement of DNA and mutations. These changes to the DNA are one of the real drivers of tumor development. However, DNA mutations are static and represent historical events that may not be driving a person's cancer.

Messenger RNA (mRNA) expression reflects the biological processes that are in action at the time of biopsy. Therefore, it is something that is going to impact the biology of that cell, whereas DNA really just describes the potential to impact the biology of that cell, RNA tells you that it "is" happening.

CEOFCO: *What are some of the tools needed to discovery dominant biology in a cell tumor?*

Dr. Benjamin: I use the expression "dominant biology" really as a way to describe what the biology is that is driving disease progression for this particular cancer, and there can be more than one "dominant biology". Our focus right now is on the tumor micro-environment and what its most important biological features are. However, there are also biologies that are associated with the tumor cells that we plan to explore as part of our ongoing discovery and development efforts.

There is a real landmark paper from 2000 that was published in Cell Press called the Hallmarks of Cancer, by Douglas Hanahan and Robert A. Weinberg. That paper really started to describe key biologies that are important for cancer. The original publication has been updated over the years and has become, I would say, a real pillar of the field. It gets down to what things make a cancer cell grow out of control, how the vasculature plays a role, how cancer cells avoid cell death, and how they avoid the immune system. All of these are fundamental differences between cancer cells and normal cells.

"I hope I have been able to convey that giving patients and physicians a better choice as to the best way to beat cancer is at the heart of our mission. Using our unique RNA based-dominant biology approach, we match patients with the treatment that has the highest probable success rate in order to give them the highest chance of benefit." Laura E. Benjamin, PhD

When we talk about a dominant biology, we are really thinking about those fundamental differences that are critical for a cancer cell to grow uncontrolled and metastasize and take over a patient's body.

CEOFCO: *Would you tell us about your RNA Platform and AI (Artificial Intelligences), its application and uses?*

Dr. Benjamin: When we are working with data on the scale of the whole genome, like we are when we work with either with the DNA or RNA, it requires some very sophisticated computing power. Therefore, AI and the tools that have been developed around AI are really necessary for us to work with such big, complex amounts of data.

We apply the derived RNA signatures to develop treatment algorithms for our clinical programs in order to dramatically improve the success rate of clinical trials by enriching the intent-to-treat patient population with those patients whose dominant biology is the best fit for the mechanism of action of our compounds.

CEOFCO: *Are many companies in your space incorporating AI, or is that something is unique to you?*

Dr. Benjamin: I think that anyone who is working with big data these days in genomics, I am sure, is using AI in some way or form. It is not that common to have a therapeutics company like ourselves driving that effort in terms of really building our own biomarkers, but there are multiple diagnostic companies out there that are also trying to do this. I think without having a pipeline though, they are really dependent on finding collaborations and partners with therapeutic companies.

CEOFCO: *What is your model? Are you more drug discover/development or diagnostics? Are you looking to partner and use your platform and technology with other drug discovery or diagnostics companies?*

Dr. Benjamin: We are a therapeutics company. We believe that in order to best develop our drugs, which is our focus, we need to understand which patients to treat. In order to do that we need to be on the cutting edge of identifying the right biomarkers for our drugs.

Ultimately, once we understand the right biomarker, in our case by using an RNA expression panel and an algorithm to interpret that panel, we would expect it to become incorporated into clinical trials as we are doing now, and then down

the road, into a diagnostic. However, we will not be in the business of commercializing that diagnostic. We will partner with the diagnostics company for that piece of it.

CEO/COO: *Would you tell us about your current programs in advanced gastric cancer with Baviximab and advanced ovarian cancer with Navixizumab?*

Dr. Benjamin: For short we call them Bavi and Navi. Bavi is an antibody that interrupts the signaling between phosphatidylserine (PS) and a variety of receptors found on immune cells. Interrupting that signaling improves the immune response in certain cancers and allows patients to achieve increased benefits from currently available Checkpoint inhibitors, like anti-PD1s and anti-PDL1s.

We have an ongoing combination clinical trial in gastric cancer with Baviximab and Pembrolizumab (KEYTRUDA®). We have reported out data on about half of that study in a recent publication at ESMO, and more recently at the SITC conference, and we are encouraged by their early observations that Baviximab is helping patients in combination with KEYTRUDA.

Navi is an investigational anti-DLL4/VEGF bispecific antibody that has received Fast Drug Designation from the FDA and is now in Phase 1 clinical studies in combination with standard of care chemotherapy for the treatment of patients with advanced ovarian cancer.

CEO/COO: *Navixizumab was granted an FDA Fast Track designation. Why is that important?*

Dr. Benjamin: The FDA has made a lot of progress in becoming more innovative and working closer with drug developers to bring innovative medicines to patients faster. Fast Track is one of the designations that you can apply for and it's intended to expedite development and help the innovative drug in question, which has an opportunity for helping patients that are considered to have an unmet need, get through development faster and enhance cooperation from the agency.

CEO/COO: *On September 18th of this year you announced a name change from Oncologie, Inc. to OncXerna Therapeutics, Inc. What was the reason for the name change and why now?*

Dr. Benjamin: We are almost three years old and we have been pretty well in stealth mode for most of this time. However, at the end of the summer, we were able to read out data for the first time on our two clinical programs and also on the performance of our biomarker. Therefore, we felt that this was the right time to step forward and come further out of stealth.

It has been in our plans to modernize our name and we chose OncXerna because for us, the X in the middle is the intersection between oncology and our RNA based biomarker platforms. This is also where we can focus most intently on the patient. The patient needs to be in the center of our efforts for all of our programs. It was also a name that really resonated with all of us.

CEO/COO: *You recently announced that you will be participating in the Jefferies Virtual London Healthcare Conference. Obviously virtual because of COVID. What does it take to be prepared to do a virtual conference? Will you miss the in-person opportunities to discuss and answer questions?*

Dr. Benjamin: Many of us are understanding the pros and the cons of the virtual world. I personally do miss the interactions and the excitement of the unknown, not only of presenting live, but also of the conversations that happen in the hallways and the opportunities to meet people. However, I think the virtual platform has been very successful. In some sense, it allows you to do more and potentially reach a broader audience. I also think in the future we will find some kind of middle ground between the old ways and the new ways.

CEO/COO: *Would you tell us about funding? Are you set for now or are you reaching out to investors and potential partners?*

Dr. Benjamin: We are a private company, not publicly traded on the stock exchange. As I described before, we are slowly coming out of stealth mode and are always interested in reaching out to a broader audience that includes investors and potential partners.

CEOCFO: In closing, why is OncXerna Therapeutics, Inc. an important company in today's world of healthcare, medicine, diagnostics and treatment of cancer?

Dr. Benjamin: I hope I have been able to convey that giving patients and physicians a better choice as to the best way to beat cancer is at the heart of our mission. Using our unique RNA based-dominant biology approach, we match patients with the treatment that has the highest probable success rate in order to give them the highest chance of benefit.



© All rights reserved – Use of this interview without express written consent of CEOCFO Magazine is prohibited.