

**With a broad commitment to Catalyzing Personalized Medicine in Autoimmune Diseases, IGNYTA, Inc. is focused on Commercializing and helping Best-in-Class Diagnostics as well as Therapeutics for Autoimmune Diseases**

**Healthcare  
Personalized Medicine**

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**Jonathan Lim, M.D.  
Chairman, CEO and Co-Founder**

**BIO:**

Jonathan Lim is the Chairman, CEO and Co-Founder of Ignyta, Inc. (formerly NexDx, Inc.), a portfolio company of City Hill Ventures, LLC, a health care investment firm he founded in December 2010. In March 2011, Jonathan co-founded and more recently served as Chairman and CEO of Eclipse Therapeutics, a Biogen Idec spinout which was successfully acquired by Bionomics Ltd (ASX:BNO) in September 2012. From May 2003 to December 2010, Jonathan was President, CEO, and Board

Director of Halozyme Therapeutics, Inc. (NASDAQ: HALO), where he led the company's growth from a privately held startup with 5 employees to a publicly traded company with 140 employees and peak market capitalization of nearly \$1 billion. Under his leadership, the company went public and raised \$300 million from financing and corporate partnerships with Roche and Baxter, achieved two U.S. FDA approvals, and built a deep pipeline of late stage clinical drug candidates. Jonathan's prior experience includes management consulting at McKinsey & Company, NIH Postdoctoral Fellowship at Harvard, and two years of general surgery residency at New York Hospital-Cornell. He has B.S. and M.S. degrees from Stanford, M.D. from McGill, and M.P.H. from Harvard.

**About Ignyta, Inc.:**

IGNYTA is a San Diego-based, scientifically driven biotechnology company providing next generation products and services for personalized medicine in autoimmune diseases. Our goals are to revolutionize the quality of biomarkers and tests available to rheumatologists and patients to help them make better informed, more individualized treatment decisions; and to identify truly novel autoimmune disease targets for biopharmaceutical companies to enable the development of precise therapies for rheumatology patients.

**Interview conducted by:  
Lynn Fosse, Senior Editor  
CEOCFO Magazine**

**CEOCFO:** Dr. Lim, Ignyta is a scientifically driven, biotechnology com-

pany. What does that mean and how is that different from a "standard" biotech?

**Dr. Lim:** By scientifically driven we mean that Ignyta is applying some of the most cutting-edge scientific approaches to the development of personalized medicine solutions for autoimmune diseases. For example, genomic and epigenomic technologies as well as leading-edge bioinformatics solutions could be able to identify, develop and commercialize the most accurate biomarkers possible for diagnostic and therapeutic uses.

**CEOCFO:** There has been a recent change in name to Ignyta, why so?

**Dr. Lim:** Ignyta reflects our broader commitment to catalyzing personalized medicine in autoimmune diseases; rather than being linked only to the diagnostic arena, we have set our sights on developing, commercializing and helping best-in-class diagnostics, as well as therapeutics, for autoimmune diseases.

**CEOCFO:** What are you specifically working on now?

**Dr. Lim:** We are working on a molecular diagnostic test that can help rheumatologists identify, diagnose and treat patients with early rheumatoid arthritis. There is very strong evidence that early identification and treatment of the patients at risk of developing rheumatoid arthritis has a huge impact on their downstream morbidity and mortality. The biggest shortcoming right now is that today's diagnostic tests are inadequate for early identification of patients with RA. For example, a significant proportion of patients that present with non-specific joint pain are negative for the

current lab-based diagnostic tests. We believe that by taking a molecular approach and analyzing the DNA of patients with non-specific joint pain called undifferentiated arthritis, we can come up with a better molecular diagnostic that really meets physician and patient needs. This approach will lead to a highly accurate test that can allow for early diagnosis and treatment of these patients, to the point that you can even potentially achieve remission and cure.

**CEO CFO:** Is this concept unique and what have you discovered that has allowed you to go down this path?

**Dr. Lim:** There are other companies looking at protein biomarkers in rheumatoid arthritis. We are the first company that really focused on molecular biomarkers in rheumatoid arthritis, and we are taking an approach called epigenomics where we are analyzing heritable, reversible changes in DNA that alter the function of the DNA without changing the sequence of the DNA. Rather than looking at mutations of the DNA sequence, we are looking at changes in its function and this particular approach within rheumatoid arthritis seems to be the link between environmental influences and the biology of the disease. Epigenetics is the bridge between genetics and the environment, which could help explain, beyond genetics alone, why certain people get rheumatoid arthritis and other autoimmune diseases.

**CEO CFO:** How did you decide to work in this particular area?

**Dr. Lim:** The work stems from Gary Firestein's original findings in the area of rheumatoid arthritis. Dr. Firestein is the dean of translational medicine, professor and former chair of Rheumatology at UCSD. Gary asked the question of whether there was an epigenetic basis for the development of rheumatoid arthritis. He took a number of patient samples from patients with rheumatoid arthritis and compared their DNA against DNA from patients who did not have rheumatoid arthritis, and he found striking differ-

ences in their epigenetic signatures in the RA versus non-RA patients. These findings were the most exciting scientific results that he had seen in his twenty years of research. When I saw the data, I too was very excited. So much so that Dr. Firestein and I decided to start a new company on the basis of this discovery, which led to the formation of Ignyta in August of 2011.

**CEO CFO:** Where are you in the development process today?

**Dr. Lim:** We are refining the signature that we believe can lead to a high accuracy molecular diagnostic test. We will also be conducting clinical studies with this signature next year. We will then look to build a certified diagnostic laboratory to commercialize the test, which will most likely be

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in the next couple of years.

**CEO CFO:** Over the last few months, you have added to your advisory board; will you tell us about the new members?

**Dr. Lim:** We are building a world class scientific advisory board anchored by Gary Firestein as the inaugural member of the SAB. We have also added Peggy Crow of Hospital for Special Surgery (HSS) in New York, Mike Holers from the University of Colorado in Denver, and Robert Plenge from Brigham and Women's Hospital in Boston. These are world class scientific advisors in rheumatoid arthritis, lupus and other autoimmune diseases. They are a great sounding board for us as we develop and commercialize our personalized medicine solutions for autoimmune diseases.

**CEO CFO:** How far can Ignyta go with your current funding?

**Dr. Lim:** We can get to the end of next year and potentially into 2014. We are in active discussions with prospective business development partners and we are applying for a number of grants, any of which can bring in additional funding for the company. We also have active interest expressed by institutional and individual investors who are interested in being able to invest more money in the company.

**CEO CFO:** Has the medical community paid attention?

**Dr. Lim:** The early conversations that we have had with the medical community have been very positive, and that is driven by the strong unmet need in terms of early diagnosis and treatment of rheumatoid arthritis as well as early diagnosis treatment and prediction of flare in lupus. The enthusiasm for what we have been doing has been very high in the medical community. This enthusiasm for our work has resulted in two presentations (oral and poster) at the American College of Rheumatology Annual Meeting in Washington DC in early November.

**CEO CFO:** Is there anything on the backburner that you might want to look at or are your hands full now?

**Dr. Lim:** We are predominantly focused on RA and lupus but we are also interested in exploring the molecular basis of other autoimmune diseases in the future.

**CEO CFO:** You have a background in business and in biotech; what have you learned over the years that is most applicable to Ignyta?

**Dr. Lim:** We have a commitment to hiring the best and brightest people and putting them in the right place at the company, then getting out of their way to let them do what they do best. Second is committing to developing the best science possible and to be very data driven in that process and

the third is to make sure we never run out of fuel.

**CEOCFO:** Why should the business and investment community pay attention to Ignyta?

**Dr. Lim:** Ignyta stands out because we are targeting a blockbuster market with an incredibly strong unmet medical need in a very exciting personalized medicine revolution that is currently taking place. We have a highly differentiated scientific approach that

we are taking with strong intellectual property, a world class management team and scientific advisory board to make it happen. In my twenty years in the biotech and medical industry, I have never been more excited about any company's opportunity.

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