Recent Growth in the Boston Area Life Sciences Ecosystem

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The life sciences ecosystem in Boston is flourishing at a prolific pace. Boston is the mecca of strong universities coupled with some of the top teaching hospitals in the country, producing imaginative, intelligent individuals with science and medical backgrounds. These researchers and entrepreneurs are driven to launch the latest groundbreaking ideas and devices to fight diseases, develop cures, and challenge the status quo in the life sciences ecosystem. It is no secret that from Cambridge to Boston there is a plethora of life sciences startup companies who are leasing out small lab spaces and taking over shared space offices like We Work and the Cambridge Innovation Center as they try to make their permanent handprint on the future of our society. The number of life science startups is rapidly increasing, and the investment activity is the highest it has been in years.

The U.S. Bureau of Labor Statistics and the Massachusetts Biotechnology Council have reported biopharma industry growth with life sciences job increasing 28% in Massachusetts over the course of 10 years, and by 4.3% in the past year alone. In addition, Massachusetts now has over 29 million square feet dedicated to commercial lab space, which is a growth of over 12 million square feet of commercial lab space in Massachusetts over the last 10 years, an increase of 71%. The Boston-Cambridge area now has over 500 biotech companies. The Massachusetts Biotechnology Council also reported that venture capital investment in Massachusetts biopharma companies was $2.9 billion in 2016, $3.1 billion in 2017, and in the first two quarters of 2018 has already reached $2.7 billion. The MassBioEd Job Trends analysis noted that for the first time in history, employment in the life sciences industry in Massachusetts exceeded 70,000 jobs in 2017. According to TechCrunch, venture capital investment in the Boston area reached $5.2 billion already this year for 2018 (on track to be the highest annual total in recent years). They also revealed that Boston is currently 15% higher than New York City totals for overall venture capital investment this year.

This growth is expected to continue, as the Massachusetts Biotechnology Education Foundation reported that nearly 12,000 new jobs are expected to be created between mid-2017 and mid-2023. Further contributing to the current and future growth of Massachusetts life sciences companies is the nearly $500 million that the Baker-Polito administration committed over the next five years for life sciences education, research, development and training in Massachusetts. This Massachusetts life sciences initiative was announced in a press release by the Massachusetts legislature in June of last year, and is expected to ensure that Massachusetts remains the biotech capital of the world.

Highlights of several Boston-area life sciences companies who are experiencing recent growth include:

> **Moderna Therapeutics** is a Cambridge-based life sciences company, which was named the largest Boston-based funding recipient thus far in 2018. The company is a developer of mRNA-based vaccines and therapies spanning several therapeutic areas. Moderna raised

$625 million across two funding rounds in 2018.

Cristcot is a life sciences company based in Concord, Massachusetts that focuses on unique drug delivery systems, combination products and specialty drug formulations including their new drug delivery device Sephure® which just received FDA clearance. Jennifer Davagian, who launched the company in 2008 and leads this company as its President & CEO, has brought continued success to the company including the issuance of several U.S. patents.

Foghorn Therapeutics is a Cambridge-based life sciences startup company developing therapies based on a system that directs which genes our cells express and in what order. The company uses its proprietary Gene Traffic Control™ product platform to discover and develop drugs based on complex and innovative insights into the chromatin regulatory system. The company announced this March that they received an initial capital commitment of $50 million.

Ginkgo Bioworks is a Boston-based life sciences startup whose synthetic biology reconfigures the genome of organisms to make products such as perfume, drink sweeteners and fertilizer replacements. The company was founded by a group of MIT scientists back in 2009, and raised over $429 million with $275 million coming in during a Series D round in December 2017. This company has caught the eye of business magnate Bill Gates, as his asset management firm, Cascade Investment, is one of the recent investors.

Orionis Biosciences is a Newton-based life sciences startup that is engaged in the research, development and commercialization of small molecules and biologies for the treatment of various diseases or conditions in the fields of oncology and immunotherapy. The company, founded in 2015, just completed a Series B financing upward of $25 million in April 2018.

Inari Agriculture is a Cambridge-based life sciences startup that was conceived and established by Flagship Pioneering in 2016, which develops transformational plant breeding technology. The company aims to develop new types of seeds at a fraction of the cost and time commitment that the process usually takes. The company recently raised $40 million in a Series B financing.

Kaleido Biosciences is a Bedford-based life sciences startup company, founded in 2015, focusing on clinical-stage healthcare that develops novel chemistries to drive functions of the microbiome organ. The company recently announced that it closed on a $101 million Series C financing. Kaleido revealed that it plans to use the proceeds from this financing to advance its pipeline, including conducting multiple clinical studies across several therapeutic areas, and to expand its platform.

Boston-based life science startups are rapidly growing and gaining increased amounts of investment funds to continue their important, innovative work. The future is bright for life sciences and Boston has emerged as a persistent leader of cutting-edge biotechnology and biopharma developments. The continual increase in life sciences investment funds, upsurge in biotech jobs, pioneering entrepreneurs and venture capitalists, coupled with the coalescence of some of the world's strongest universities, teaching hospitals, and academic medical and research centers indicates that this consistent amplified growth the Boston area is experiencing in the life sciences sector has just begun and Boston looks to remain a leader in the life sciences for years to come.

To learn about information that life sciences companies should consider during their early stages, please see the article *The Top Five Considerations for Startups*.

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