Filed Pursuant to Rule 424(b)(5)
Registration No. 333-239473

PROSPECTUS SUPPLEMENT
(To Prospectus dated July 2, 2020)

Up to $40,000,000

Common Stock

We have entered into an Open Market Sale Agreement[SM], or the sales agreement, with Jefferies LLC, or Jefferies, relating to the sale of shares of our common stock offered by this prospectus supplement. In accordance with the terms of the sales agreement, we may offer and sell shares of our common stock having an aggregate offering price of up to $40,000,000 from time to time through Jefferies, acting as our sales agent.

Our common stock is listed on The Nasdaq Capital Market under the symbol "BLPH." On July 15, 2020, the last reported sale price of our common stock was $13.68 per share.

Sales of our shares, if any, under this prospectus supplement may be made in sales deemed to be an "at the market offering" as defined in Rule 415(a)(4) promulgated under the Securities Act of 1933, as amended, or the Securities Act. Jefferies is not required to sell any specific number or dollar amount of securities, but will act as a sales agent using commercially reasonable efforts consistent with its normal trading and sales practices, on mutually agreed terms between Jefferies and us. There is no arrangement for funds to be received in any escrow, trust or similar arrangement.

Jefferies will be entitled to compensation under the terms of the sales agreement at a fixed commission rate equal to 3.0% of the gross sales price per share sold under the sales agreement. See "Plan of Distribution" beginning on page S-14 for additional information regarding Jefferies' compensation. In connection with the sale of common stock on our behalf, Jefferies will be deemed to be an "underwriter" within the meaning of the Securities Act and the compensation of Jefferies will be deemed to be underwriting commissions or discounts. We have also agreed to provide indemnification to Jefferies against certain liabilities, including liabilities under the Securities Act or the Securities Exchange Act of 1934, as amended, or the Exchange Act. See section titled "Plan of Distribution" on page S-14 of this prospectus supplement.

Investing in our common stock involves a high degree of risk. Before making an investment decision, please read the information contained in and incorporated by reference under the heading "Risk Factors" on page S-7 of this prospectus supplement, and under similar headings in the other documents that we have filed or that are filed after the date hereof and incorporated by reference into this prospectus supplement.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement is truthful or complete. Any representation to the contrary is a criminal offense.

Jefferies

July 17, 2020

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ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement is part of a registration statement that we have filed with the Securities and Exchange Commission, or SEC, utilizing a "shelf" registration process. Under the shelf registration statement, we may, from time to time, offer and sell, either individually or in combination, in one or more offerings shares of our common stock, preferred stock, debt securities and warrants, including common stock or preferred stock upon conversion of debt securities, common stock upon conversion of preferred stock, or common stock, preferred stock or debt securities upon the exercise of warrants, having an aggregate offering price of up to $150,000,000. Under this prospectus supplement, we may offer and sell shares of our common stock having an aggregate offering price of up to $40,000,000 from time to time at prices and on terms to be determined by market conditions at the time of offering.

This document contains two parts. The first part consists of this prospectus supplement, which provides you with specific information about this offering. The second part, the accompanying prospectus, provides more general information, some of which may not apply to this offering. Generally, when we refer only to the "prospectus," we are referring to both parts combined. This prospectus supplement may add, update, or change information contained in the accompanying prospectus. To the extent that any statement we make in this prospectus supplement is inconsistent with statements made in the accompanying prospectus or any documents incorporated by reference herein or therein, the statements made in this prospectus supplement will be deemed to modify or supersede those made in the accompanying prospectus and such documents incorporated by reference herein and therein. You should read this prospectus supplement and the accompanying prospectus, including the information incorporated by reference herein and therein, and any related free writing prospectus that we have authorized for use in connection with this offering.

You should rely only on the information contained or incorporated by reference in this prospectus supplement. We have not, and the sales agent has not, authorized anyone to provide you with information that is in addition to or different from that contained or incorporated by reference in this prospectus supplement or contained in any permitted free writing prospectuses we have authorized for use in connection with this offering. We and the sales agent take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may provide.

The information contained in this prospectus supplement and the documents incorporated by reference herein is accurate only as of their respective dates, regardless of the time of delivery of any such document or the time of any sale of shares of our common stock. Our business, financial condition, results of operations and prospects may have changed since those dates. It is important for you to read and consider all information contained or incorporated by reference in this prospectus supplement in making your investment decision. You should read this prospectus supplement, as well as the documents incorporated by reference herein, the additional information described under the section titled "Where You Can Find More Information" and "Incorporation of Certain Documents by Reference" in this prospectus supplement and any free writing prospectus that we have authorized for use in connection with this offering, before investing in our common stock.

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference in this prospectus supplement were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreements, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

We are offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where such offers and sales are permitted. The distribution of this prospectus supplement and the offering of shares of our common stock in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement must inform themselves about, and observe any restrictions relating to, the offering of shares of our common stock and the distribution of this prospectus supplement outside the United States. This prospectus supplement does not constitute an offer to sell or the solicitation of an offer to buy any securities other than the common stock to which it relates, nor does this prospectus supplement constitute an offer to sell or the solicitation of an offer to buy securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction.

Unless otherwise indicated, information contained in or incorporated by reference into this prospectus supplement concerning our industry and the markets in which we operate, including market opportunity, market position and competitive landscape, is based on information from our management's estimates, as well as from industry publications, surveys and studies conducted by third parties. Management estimates are derived from publicly available information, our knowledge of our industry, and assumptions based on such information and knowledge, which we believe to be reasonable. In addition, while we believe that information contained in the industry publications, surveys and studies has been obtained from reliable sources, the accuracy and completeness of such information is not guaranteed, and we have not independently verified any of the data contained in these third-party sources.

This prospectus supplement, including the documents incorporated by reference herein, includes statements that are based on various assumptions and estimates that are subject to numerous known and unknown risks and uncertainties. Some of these risks and uncertainties are described in the section entitled "Risk Factors" beginning on page S-7 of this prospectus supplement and described in described in Part I, Item 1A (Risk Factors) of our most recent Annual Report on Form 10-K for the fiscal year ended December 31, 2019, as well as the other documents we file with the SEC. These and other important factors could cause our future results to be materially different from the results expected as a result of, or implied by, these assumptions and estimates. You should read the information contained in, or incorporated by reference into, this prospectus supplement completely and with the understanding that future results may be materially different from and worse than what we expect. See the information included under the heading "Cautionary Note Regarding Forward-Looking Statements and Industry Data."

PROSPECTUS SUPPLEMENT SUMMARY

The following is a summary of what we believe to be the most important aspects of our business and the offering of our securities under this prospectus supplement. We urge you to read this entire prospectus supplement, including the more detailed consolidated financial statements, notes to the consolidated financial statements and other information incorporated by reference from our other filings with the SEC. Investing in our securities involves risks. Therefore, carefully consider the risk factors set forth in this prospectus supplement and in our most recent annual and quarterly filings with the SEC, as well as other information in this prospectus supplement and the documents incorporated by reference herein, before purchasing our securities. Each of the risk factors could adversely affect our business, operating results and financial condition, as well as adversely affect the value of an investment in our securities.

Overview

We are a clinical-stage therapeutics company focused on developing innovative products that address significant unmet medical needs in the treatment of cardiopulmonary and infectious lung diseases. Our focus is the continued development of our nitric oxide therapy for patients with pulmonary hypertension, or PH, using our proprietary pulsatile nitric oxide delivery platform, INOpulse.

INOpulse for PH-ILD

We are developing INOpulse for the treatment of PH associated with interstitial lung disease, or PH-ILD, which includes PH associated with idiopathic pulmonary fibrosis, or PH-IPF, as well as other pulmonary fibrosing diseases. In 2017, we initiated a three-cohort, Phase 2b study of INOpulse for the treatment of patients with pulmonary fibrosis that are at risk of PH. Cohort 1 and cohort 2 have been completed, with INOpulse demonstrating statistically significant improvements in multiple clinically meaningful parameters versus placebo. In particular, cohort 2, which treated patients with iNO45 (45 mcg/kg IBW/hr), demonstrated statistically significant improvement in moderate to vigorous physical activity, or MVPA, as measured by actigraphy, versus placebo.

In consultation with the U.S. Food and Drug Administration, or the FDA, we have converted cohort 3 of the Phase 2b study into a pivotal Phase 3 study. This Phase 3 trial will study INOpulse at the iNO45 dose in patients with pulmonary fibrosis that are at risk of PH, with MVPA as the primary endpoint for approval.

We also recently completed an ancillary Phase 2 intra-patient dose escalation study that utilized right heart catheterization to assess the hemodynamic effect of INOpulse from a dose of inhaled nitric oxide, or iNO, 30 to iNO 125 in PH-ILD subjects. In the study, INOpulse achieved clinically and statistically significant improvements in pulmonary vascular resistance and mean pulmonary arterial pressure. Inhaled nitric oxide was well-tolerated with no safety concerns across doses.

INOpulse for COVID-19

We believe INOpulse may have applications in the treatment of patients with coronavirus disease 2019, or COVID-19. In prior academic studies, nitric oxide has demonstrated a potential benefit in the treatment of SARS patients. The SARS coronavirus, or SARS-CoV, is 80% genetically similar to the coronavirus that causes COVID-19 (SARS-CoV-2). In academic studies, nitric oxide reduced viral load and replication in SARS-CoV infected cells and improved survival of SARS-CoV infected cells. In addition, inhaled nitric oxide improved oxygen saturation with less fraction of inspired oxygen required, reduced the need for assisted ventilation and prevented the proliferation of pneumonia lung infiltrates in SARS-CoV patients.

We believe INOpulse has potential to address a significant unmet need in the treatment of COVID-19 patients. Approximately 30% of hospitalized COVID-19 patients require intensive care with the majority requiring assisted ventilation. INOpulse delivery system is designed for outpatient use, which may be critical to preventing the further spread and alleviating the mounting impact on hospitals and intensive care units of COVID-19.

On March 19, 2020, the FDA granted emergency expanded access to allow for INOpulse to immediately be used as supportive treatment for a patient with COVID-19 under the care and supervision of the patient's physician. The clinical goal of this experimental treatment is to avert the hospitalized patient's disease progression and avoid the need to perform intubation. Under the recently completed emergency access program, 180 hospitalized patients with COVID-19 from 18 hospitals across the United States received treatment with INOpulse.

In April 2020, we submitted an Investigational New Drug, or IND, application to the FDA to study the iNO delivery system for the treatment of patients infected with COVID-19. The proposed randomized, placebo controlled study called PULSE-CVD19-001, will evaluate the efficacy and safety of INOpulse in patients diagnosed with COVID-19 who require supplemental oxygen before the disease progresses to necessitate mechanical ventilation support. The PULSE-CVD19-001 protocol utilizes an adaptive design and aims to enroll up to 500 patients with COVID-19 who will be treated with either INOpulse or placebo. The primary endpoint will assess the proportion of subjects that had respiratory failure or mortality, which should allow the trial to serve as a registrational study for approval. The IND application was accepted by the FDA in May 2020, and the trial was initiated with the first patient treated in July 2020. In parallel, we have submitted for federal funding, through Biomedical Advanced Research and Development Authority, or BARDA, and National Institutes of Health, or NIH, to support the study. We may not receive funding from BARDA or the NIH, and if we do, any funding may not be sufficient to fund the trial. In addition, we may be obligated to grant access rights, such as march-in rights, to the U.S. government in connection with such funding.

INOpulse for PH-Sarc

We are also developing INOpulse for the treatment of PH associated with Sarcoidosis, or PH-Sarc. Sarcoidosis is a multi-system disease which is characterized by the growth of granulomas (inflammatory cells) in one or more organs. The most frequent organs involved are the lungs and lymph nodes within the chest. PH may be present in as many as 74% of patients depending on how the PH is defined. The presence of PH in sarcoidosis is associated with a poor prognosis. There are a number of different mechanisms linking PH with sarcoidosis. The primary treatment for sarcoidosis is corticosteroids; however, the outcome of this treatment on the PH is unclear. There is no approved therapy for PH associated with sarcoidosis. Various PAH treatments have been tried including iNO and IV prostacyclin with some clinical and functional improvement. We are conducting a Phase 2a dose escalation design that will utilize right heart catheterization to assess the hemodynamic effect of INOpulse from a dose of iNO 30 to iNO 125 in PH-Sarc subjects. We expect to report results from this study in the second half of 2020.

INOpulse for PH-COPD

We are developing INOpulse for the treatment of PH associated with chronic obstructive pulmonary disease, or PH-COPD. We have completed Phase 2 and Phase 2a studies of INOpulse for the treatment of PH-COPD. While we have a defined pathway for the conduct of a Phase 2b study, we are not currently enrolling patients in this trial. We continue to evaluate alternatives for the funding and timing of this program.

Recent Developments

Reverse Stock Split

On February 5, 2020, we filed a certificate of amendment to our amended and restated Certificate of Incorporation to effect a 1-for-15 reverse stock split of our outstanding shares of common stock, which became effective on February 7, 2020. Unless otherwise stated, all share and per share amounts herein give effect to such reverse stock split.

Registered Direct Offering

On March 30, 2020, we entered into a securities purchase agreement with certain investors named therein, pursuant to which we issued and sold, in a registered direct offering by us directly to the investors, an aggregate of 1,275,000 shares of common stock, at an offering price of $12.00 per share, for gross proceeds of $15.3 million before deducting the financial advisory fees and related offering expenses of $1.2 million. The offering closed on April 1, 2020.

Concurrent Underwritten Offering and Registered Direct Offering

On May 18, 2020, we entered into the following agreements in connection with offerings of an aggregate of 3,076,923 shares of common stock at an offering price of $13.00 per share: (i) an underwriting agreement with Jefferies LLC, as representative of the several underwriters, relating to an underwritten public offering of 1,923,077 shares of common stock and (ii) a subscription agreement with an institutional investor affiliated with Theodore Wang, a member of our board of directors, relating to a registered direct offering of 1,153,846 shares of common stock. The offerings closed on May 22, 2019 for gross proceeds of approximately $43.7 million, which included the full exercise of the underwriters' option to purchase an additional 288,461 shares, before deducting underwriting costs, financial advisory fees and other offering expenses of $3.2 million.

Corporate Information

We were incorporated under the laws of the State of Delaware on October 17, 2013 under the name Ikaria Development LLC. We changed our name to Bellerophon Therapeutics LLC on January 27, 2014. On February 12, 2015, we converted from a Delaware limited liability company into a Delaware corporation and changed our name to Bellerophon Therapeutics, Inc. We currently have three wholly-owned subsidiaries: Bellerophon BCM LLC, a Delaware limited liability company; Bellerophon Pulse Technologies LLC, a Delaware limited liability company; and Bellerophon Services, Inc., a Delaware corporation. Our website address is www.bellerophon.com. The information contained on, or that can be accessed through, our website does not constitute part of this prospectus supplement. We have included our website address in this prospectus supplement solely as an inactive textual reference.

Our executive offices are located at 184 Liberty Corner Road, Suite 302, Warren, New Jersey 07059, and our telephone number is (908) 574-4770.

THE OFFERING

Common stock offered by us:	Shares of our common stock having an aggregate offering price of up to $40,000,000.
Common stock to be outstanding after this offering:	Up to 12,421,753 shares of common stock (as more fully described in the notes following this table), assuming sales of 2,923,976 shares of our common stock in this offering at an offering price of $13.68 per share, which was the last reported sale price of our common stock on the Nasdaq Capital Market on July 15, 2020. The actual number of shares issued will vary depending on the sales price under this offering.
Plan of Distribution:	"At-the-market" offering that may be made from time to time on the Nasdaq Capital Market or other existing trading market for our common stock through our sales agent, Jefferies. See "Plan of Distribution" on page S-14 of this prospectus supplement.
Use of Proceeds:	We currently expect to use the net proceeds from this offering, together with our existing cash and cash equivalents, to fund our ongoing clinical trials, working capital and general corporate purposes. See "Use of Proceeds."
Risk Factors:	Investing in our common stock involves significant risks. See "Risk Factors" beginning on page S-7 of this prospectus supplement, and under similar headings in documents incorporated by reference into this prospectus supplement, for a discussion of factors you should consider before buying shares of our common stock.
Nasdaq Capital Market symbol:	"BLPH"

The number of share of common stock to be outstanding after this offering is based on 9,497,777 shares of common stock outstanding as of July 15, 2020, which includes 4,857,393 shares of our common stock outstanding as of March 31, 2020, plus 4,640,384 shares of our common stock that were issued in the offerings completed during the second quarter of 2020, and excludes:

- 666,444 shares of our common stock issuable upon the exercise of stock options outstanding at March 31, 2020, at a weighted average exercise price of $24.64 per share;
- 2,028,626 shares of our common stock issuable upon the exercise of warrants outstanding at March 31, 2020, at a weighted average exercise price of $16.61 per share; and
- 454,362 additional shares of our common stock available for future issuance as of March 31, 2020, under our 2015 Equity Incentive Plan.

RISK FACTORS

Investing in our common stock involves a high degree of risk. Before you decide to invest in our common stock, you should carefully consider the risks and uncertainties described below, together with all other information contained in this prospectus supplement and in our filings with the SEC that we have incorporated by reference into this prospectus supplement, including the Risk Factors included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2019, filed on April 6, 2020 and our Quarterly Report on Form 10-Q for the quarter ended March 31, 2020. If any of the following risks actually occurs, our business, prospects, operating results and financial condition could suffer materially. In such event, the trading price of our common stock could decline and you might lose all or part of your investment.

Risks Related to the Company

Our business may be adversely affected by the COVID-19 pandemic.

The COVID-19 pandemic has affected our operations, and may materially affect our business. In response to the pandemic, we have limited operations, including implemented work from home and social distancing policies. For instance, our clinical trials may suffer from lower than anticipated patient recruitment or enrollment and we may be forced to temporarily delay ongoing trials in PH. In addition, we risk a delay, default and/or nonperformance under our existing agreements arising from force majeure. The extent to which the coronavirus impacts our results will depend on future developments, which are highly uncertain and cannot be predicted, including new information which may emerge concerning the severity of the coronavirus and the actions to contain the coronavirus or treat its impact, among others.

In addition, COVID-19 has resulted in significant governmental measures being implemented to control the spread of the virus, including quarantines, travel restrictions, social distancing and business shutdowns. We have taken temporary precautionary measures intended to help minimize the risk of the virus to our employees, including temporarily requiring all employees to work remotely. We have already suspended non-essential travel worldwide for our employees and are discouraging employee attendance at other gatherings. These measures could negatively affect our business. For instance, temporarily requiring all employees to work remotely may induce absenteeism, disrupt our operations or increase the risk of a cybersecurity incident. COVID-19 has also caused volatility in the global financial markets and threatened a slowdown in the global economy, which may negatively affect our ability to raise additional capital on attractive terms or at all.

The extent to which COVID-19 may impact our business will depend on future developments, which are highly uncertain and cannot be predicted with confidence, such as the duration of the pandemic, the severity of COVID-19 or the effectiveness of actions to contain and treat COVID-19, particularly in the geographies where we or our third party suppliers, contract manufacturers, or contract research organizations operate. We cannot presently predict the scope and severity of any potential business shutdowns or disruptions. If we or any of the third parties with whom we engage, however, were to experience shutdowns or other business disruptions, our ability to conduct our business in the manner and on the timelines presently planned could be materially and negatively affected, which could have a material adverse impact on our business and our results of operations and financial condition.

Although the FDA has granted us emergency expanded access to allow for INOpulse to be used as treatment for certain patients with COVID-19 under the care and supervision of such patient's physician, and has accepted our application to initiate a Phase 3 study of INOpulse therapy in patients with COVID-19, we cannot assure you that INOpulse will prove to be a safe or effective treatment for COVID-19 or approved for marketing by the FDA.

On March 19, 2020, the FDA granted emergency expanded access to allow for our proprietary iNO delivery system, INOpulse to immediately be used as supportive treatment for single patients with COVID-19 under the care and supervision of the patient's physician. This emergency expanded access from the FDA was granted on a named patient basis and subsequently expanded to allow for additional COVID-19 patients as necessary. On May 11, 2020, we announced that the FDA had accepted our IND application, allowing us to initiate a Phase 3 study of iNO therapy in up to 500 patients infected with COVID-19. The Phase 3 trial was initiated with the first patient treated in July 2020. As there is no history of using iNO for this purpose, there can be no assurance that our product will be safe or effective when used to treat COVID-19 patients. In addition, there are still regulatory and product development steps to be taken before INOpulse is approved for marketing by FDA and can be fully commercialized in the United States. Accordingly, there can be no assurance that INOpulse will prove to be a safe or effective treatment for COVID-19 or that it will be approved for marketing by the FDA or that it can be successfully commercialized.

Risks Related to Ownership of Our Common Stock, This Offering and Other Matters

The trading price of our common stock has been, and is likely to continue to be highly volatile and could be subject to wide fluctuations in response to various factors, some of which are beyond our control, and you may lose all or part of your investment.

The market price of our common stock could fluctuate significantly, and you may not be able to resell your shares at or above the offering price. Those fluctuations could be based on various factors in addition to those otherwise described in this prospectus supplement. Any of these factors may result in large and sudden changes in the volume and trading price of our common stock. In the past, following periods of volatility in the market price of a company's securities, stockholders have often instituted securities class action litigation against that company. If we were involved in a class action suit, it could divert the attention of management, result in negative press reports and, if adversely determined, have a material adverse effect on our results of operations and financial condition.

In addition, the stock market in general and the market for smaller pharmaceutical and biotechnology companies in particular have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. As a result of this volatility, you may not be able to sell your common stock at or above the public offering price and you may lose some or all of your investment.

If securities analysts do not publish research or reports about our business or if they publish negative evaluations of our stock, the price of our stock could decline.

The trading market for our common stock will rely, in part, on the research and reports that industry or financial analysts publish about us or our business. There can be no assurance that existing analysts will continue to cover us or that new analysts will begin to cover us. There is also no assurance that any covering analyst will provide favorable coverage. A lack of research coverage or adverse coverage may negatively impact the market price of our common stock. In addition, if one or more of the analysts covering our business downgrade their evaluations of our stock, the price of our stock could decline. If one or more of these analysts cease to cover our stock, we could lose visibility in the market for our stock, which in turn could cause our stock price to decline.

You may incur immediate and substantial dilution as a result of this offering.

The offering price per share of our common stock in this offering may exceed the net tangible book value per share of our common stock outstanding prior to this offering. Assuming that an aggregate of 2,923,976 shares of our common stock are sold at a price of $13.68 per share, the last reported sale price of our common stock on The Nasdaq Capital Market on July 15, 2020, for aggregate gross proceeds of $40.0 million, and after deducting commissions and estimated offering expenses payable by us, you would experience immediate dilution of $5.99 per share, representing the difference between our pro forma as adjusted net tangible book value per share and our pro forma net tangible book value per share as of March 31, 2020, after giving effect to this offering at the assumed public offering price. The exercise of outstanding stock options could result in further dilution of your investment. See "Dilution" beginning on page S-12 of this prospectus supplement for a more detailed description of the dilution to new investors in this offering.

You may experience future dilution as a result of future equity offerings.

In order to raise additional capital, we may offer additional shares of our common stock or other securities convertible into or exchangeable for our common stock in the future. We cannot assure you that we will be able to sell shares or other securities in any other offering at a price per share that is equal to or greater than the price per share paid by investors in this offering, and investors purchasing shares or other securities in the future could have rights superior to existing stockholders. The price per share at which we sell additional shares of our common stock or other securities convertible into or exchangeable for our common stock in future transactions may be higher or lower than the price per share in this offering.

We have broad discretion in the use of the proceeds from this offering and may invest or spend the proceeds in ways with which you do not agree and in ways that may not yield a return on your investment.

Although we currently intend to use the proceeds from this offering in the manner described in the section titled "Use of Proceeds" in this prospectus supplement, our management will have broad discretion in the application of the proceeds from this offering and could spend the proceeds in ways that do not improve our results of operations or enhance the value of our common stock. You will not have the opportunity to influence our decisions on how to use our proceeds from this offering. The failure by our management to apply these funds effectively could result in financial losses that could harm our business, cause the price of our common stock to decline and delay the development of our product candidates. Pending their use, we may invest the proceeds from this offering in a manner that does not produce income or that loses value.

Because we do not anticipate paying any cash dividends on our capital stock in the foreseeable future, capital appreciation, if any, will be your sole source of gain.

We have never declared or paid cash dividends on our capital stock. We currently intend to retain all of our future earnings, if any, to finance the growth and development of our business. As a result, capital appreciation, if any, of our common stock will be your sole source of gain for the foreseeable future, and investors seeking cash dividends should not purchase shares of our common stock. Our board of directors has significant discretion as to whether to distribute dividends and in what amounts. Even if our board of directors decides to declare and pay dividends, the timing, amount and form of future dividends, if any, will depend on, among other matters, our future results of operations and cash flow, our capital requirements and surplus, the amount of distributions, if any, received by us from our subsidiaries, our financial condition, contractual restrictions and other factors deemed relevant by our board of directors.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS AND INDUSTRY DATA

This prospectus supplement and the documents incorporated by reference herein may contain forward looking statements that involve risks and uncertainties. All statements other than statements of historical fact contained in this prospectus supplement and the documents incorporated by reference herein, including statements regarding future events, our future financial performance, business strategy, plans and objectives of management for future operations and the anticipated use of the net proceeds from this offering, are forward-looking statements. We have attempted to identify forward-looking statements by terminology including “anticipates,” “believes,” “can,” “continue,” “could,” “estimates,” “expects,” “intends,” “may,” “plans,” “potential,” “predicts,” “should,” or “will” or the negative of these terms or other comparable terminology. Although we do not make forward looking statements unless we believe we have a reasonable basis for doing so, we cannot guarantee their accuracy. These statements are only predictions and involve known and unknown risks, uncertainties and other factors, including the risks outlined under the section titled “Risk Factors” or elsewhere in this prospectus supplement and the documents incorporated by reference herein, which may cause our or our industry’s actual results, levels of activity, performance or achievements expressed or implied by these forward-looking statements. Moreover, we operate in a highly regulated, very competitive, and rapidly changing environment. New risks emerge from time to time and it is not possible for us to predict all risk factors, nor can we address the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause our actual results to differ materially from those contained in any forward-looking statements.

We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy, short term and long term business operations, and financial needs. These forward-looking statements are subject to certain risks and uncertainties that could cause our actual results to differ materially from those reflected in the forward looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed in this prospectus supplement and the accompanying prospectus, and in particular, the risks discussed below and under the section titled “Risk Factors” and those discussed in other documents we file with the SEC. The following discussion should be read in conjunction with our audited consolidated financial statements as of and for the years ended December 31, 2019 and 2018, and our interim unaudited consolidated financial statements as of and for the quarter ended March 31, 2020, respectively, and related notes, incorporated by reference into the prospectus supplement. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this prospectus supplement may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statement. You should understand that it is not possible to predict or identify all risk factors. Consequently, you should not consider any such list to be a complete set of all potential risks or uncertainties.

You should not place undue reliance on any forward-looking statement, each of which applies only as of the date on which it is made, which is the date of this prospectus supplement or the accompanying prospectus or the document incorporated by reference herein in which such statement appears, as applicable. Except as required by law, we undertake no obligation to update or revise publicly any of the forward-looking statements after the date of this prospectus supplement to conform our statements to actual results or changed expectations. You are advised, however, to consult any further disclosures we make on related subjects in our reports on Forms 10-K, 10-Q and 8-K filed with the SEC.

This prospectus supplement and the information incorporated by reference herein and therein may include statistical and other industry and market data that we obtained from industry publications and research, surveys and studies conducted by third parties. All of the market data used in this prospectus supplement and the information incorporated by reference herein and therein involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such data. We believe that the information from these industry publications, surveys and studies is reliable.

USE OF PROCEEDS

We currently expect to use the net proceeds from this offering for funding our ongoing clinical trials, for working capital and general corporate purposes. This expected use of the net proceeds from this offering and our existing cash and cash equivalents represents our intentions based upon our current plans and business conditions, which could change in the future as our plans and business conditions evolve. As of the date of this prospectus supplement, we cannot predict with certainty all of the particular uses for the net proceeds to be received upon the completion of this offering or the amounts that we will actually spend on the uses set forth above. As a result, our management will retain broad discretion over the allocation of the net proceeds from this offering.

DILUTION

Our net tangible book value as of March 31, 2020 was $2.1 million, or approximately $0.44 per share of common stock. Net tangible book value per share is determined by dividing our total tangible assets, less total liabilities, by the number of shares of our common stock outstanding as of March 31, 2020. Our pro forma net tangible book value as of March 31, 2020 was $56.8 million, or $5.98 per share of common stock. Pro forma net tangible book value per share is determined by dividing our total tangible assets, less total liabilities, by the number of shares of our common stock outstanding as of March 31, 2020, after giving effect to the issuance of an aggregate of 4,640,384 shares of common stock in an underwritten public offering and two registered direct offerings consummated during the second quarter of 2020. Dilution in net tangible book value per share represents the difference between the assumed public offering price per share to be paid by purchasers of shares of common stock in this offering of $13.68 per share and the pro forma as adjusted net tangible book value per share of our common stock immediately after giving effect to this offering.

After giving effect to the assumed sale of 2,923,976 shares of our common stock by us in this offering at an assumed public offering price of $13.68 per share, which was the last reported sale price of our common stock on The Nasdaq Capital Market on July 15, 2020, after deducting commissions and estimated offering expenses of $1.4 million payable by us, our pro forma as adjusted net tangible book value as of March 31, 2020 would have been $95.4 million, or $7.69 per share. This would represent an immediate increase in net tangible book value per share of $1.71 to existing stockholders and immediate dilution of $5.99 in the pro forma as adjusted net tangible book value per share to new investors purchasing common stock in this offering at the assumed public offering price.

The following table illustrates this dilution on a per share basis. The as adjusted information is illustrative only and will change based on the actual price to the public, the actual number of shares sold and other terms of this offering determined at the time shares of our common stock are sold pursuant to this prospectus supplement. The as adjusted information assumes that all of our common stock in the aggregate amount of $40.0 million is sold at the assumed public offering price of $13.68 per share, the last reported sale price of our common stock on The Nasdaq Capital Market on July 15, 2020. The shares sold in this offering, if any, will be sold from time to time at various prices.

Assumed public offering price per share		$ 13.68
Net tangible book value per share as of March 31, 2020	$ 0.44	
Pro forma net tangible book value per share after giving effect to the second quarter 2020 offerings	5.98	
Increase in net tangible book value per share attributable to this offering	1.71	
Pro forma as adjusted net tangible book value per share after giving effect to this offering		7.69
Dilution in net tangible book value per share to new investors in this offering		$ 5.99

An increase of $1.00 per share in the price at which the shares are sold from the assumed public offering price of $13.68 per share shown in the table above, assuming that the aggregate dollar amount of shares sold by us remains at $40.0 million, would increase our pro forma as adjusted net tangible book value per share after this offering to $7.81 per share and would increase the dilution in net tangible book value per share to new investors to $6.87 per share, after deducting commissions and estimated aggregate offering expenses payable by us. A decrease of $1.00 per share in the price at which the shares are sold from the assumed public offering price of $13.68 per share shown in the table above, assuming that the aggregate dollar amount of shares sold by us remains at $40.0 million, would decrease our pro forma as adjusted net tangible book value per share after this offering to $7.55 per share and would decrease the dilution in net tangible book value per share to new investors to $5.13 per share, after deducting commissions and estimated aggregate offering expenses payable by us. The information discussed above is illustrative only and will adjust based on the actual public offering price, the actual number of shares that we offer in this offering, and other terms of this offering determined at the time of each offer and sale.

The foregoing discussion and table are based on 4,857,393 shares of our common stock outstanding as of March 31, 2020. The calculation of pro forma net tangible book value is based on 9,497,777 shares of our common stock outstanding, which includes 4,857,393 shares of our common stock outstanding as of March 31, 2020, plus 4,640,384 shares of our common stock that were issued in the offerings completed during the second quarter of 2020 for net proceeds of $54.7 million. Each calculation and the table above exclude the following:

- 666,444 shares of our common stock issuable upon the exercise of stock options outstanding at March 31, 2020, at a weighted average exercise price of $24.64 per share;

- 2,028,626 shares of our common stock issuable upon the exercise of warrants outstanding at March 31, 2020, at a weighted average exercise price of $16.61 per share; and

- 454,362 additional shares of our common stock available for future issuance as of March 31, 2020, under our 2015 Equity Incentive Plan.

To the extent that any of the outstanding options are exercised there could be further dilution to new investors. In addition, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that we raise additional capital through the sale of equity securities, the issuance of such securities could result in further dilution to our stockholders.

PLAN OF DISTRIBUTION

We have entered into a sales agreement with Jefferies, under which we may offer and sell up to $40,000,000 of our shares of common stock from time to time through Jefferies acting as agent. Sales of our shares of common stock, if any, under this prospectus supplement and the accompanying prospectus will be made by any method that is deemed to be an "at the market offering" as defined in Rule 415(a)(4) under the Securities Act.

Each time we wish to issue and sell our shares of common stock under the sales agreement, we will notify Jefferies of the number of shares to be issued, the dates on which such sales are anticipated to be made, any limitation on the number of shares to be sold in any one day and any minimum price below which sales may not be made. Once we have so instructed Jefferies, unless Jefferies declines to accept the terms of such notice, Jefferies has agreed to use its commercially reasonable efforts consistent with its normal trading and sales practices to sell such shares up to the amount specified on such terms. The obligations of Jefferies under the sales agreement to sell our shares of common stock are subject to a number of conditions that we must meet.

The settlement of sales of shares between us and Jefferies is generally anticipated to occur on the second trading day following the date on which the sale was made. Sales of our shares of common stock as contemplated in this prospectus supplement will be settled through the facilities of The Depository Trust Company or by such other means as we and Jefferies may agree upon. There is no arrangement for funds to be received in an escrow, trust or similar arrangement.

We will pay Jefferies a commission equal to 3.0% of the aggregate gross proceeds we receive from each sale of our shares of common stock. Because there is no minimum offering amount required as a condition to close this offering, the actual total public offering amount, commissions and proceeds to us, if any, are not determinable at this time. In addition, we have agreed to reimburse Jefferies for the fees and disbursements of its counsel, payable upon execution of the sales agreement, in an amount not to exceed $50,000, in addition to certain ongoing disbursements of its legal counsel, unless we and Jefferies otherwise agree. We estimate that the total expenses for the offering, excluding any commissions or expense reimbursement payable to Jefferies under the terms of the sales agreement, will be approximately $150,000. The remaining sale proceeds, after deducting any other transaction fees, will equal our net proceeds from the sale of such shares.

Jefferies will provide written confirmation to us before the open on The Nasdaq Capital Market on the day following each day on which our shares of common stock are sold under the sales agreement. Each confirmation will include the number of shares sold on that day, the aggregate gross proceeds of such sales and the proceeds to us.

In connection with the sale of our shares of common stock on our behalf, Jefferies will be deemed to be an "underwriter" within the meaning of the Securities Act, and the compensation of Jefferies will be deemed to be underwriting commissions or discounts. We have agreed to indemnify Jefferies against certain civil liabilities, including liabilities under the Securities Act. We have also agreed to contribute to payments Jefferies may be required to make in respect of such liabilities.

The offering of our shares of common stock pursuant to the sales agreement will terminate upon the earlier of (i) the sale of all shares of common stock subject to the sales agreement and (ii) the termination of the sales agreement as permitted therein.

This summary of the material provisions of the sales agreement does not purport to be a complete statement of its terms and conditions. A copy of the sales agreement will be filed as an exhibit to a current report on Form 8-K filed under the Exchange Act and will be incorporated by reference in the registration statement of which this prospectus supplement forms a part.

Jefferies and its affiliates may in the future provide various investment banking, commercial banking, financial advisory and other financial services for us and our affiliates, for which services they may in the future receive customary fees. In the course of its business, Jefferies may actively trade our securities for its own account or for the accounts of customers, and, accordingly, Jefferies may at any time hold long or short positions in such securities.

A prospectus supplement and the accompanying prospectus in electronic format may be made available on a website maintained by Jefferies, and Jefferies may distribute the prospectus supplement and the accompanying prospectus electronically.

LEGAL MATTERS

Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., New York, New York is serving as our counsel in this offering. Jefferies LLC is being represented in this offering by Cooley LLP, New York, New York .

EXPERTS

The consolidated financial statements of Bellerophon Therapeutics, Inc. as of December 31, 2019 and 2018, and for each of the years in the three-year period ended December 31, 2019, have been incorporated by reference herein and in the registration statement in reliance upon the report of KPMG LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing. The audit report covering the December 31, 2019 consolidated financial statements refers to a change in the method of accounting for leases as of January 1, 2019 due to the adoption of Accounting Standards Codification (ASC) Topic 842, Leases.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

This prospectus supplement is part of the registration statement on Form S-3 we filed with the SEC under the Securities Act and does not contain all the information set forth in the registration statement. Whenever a reference is made in this prospectus supplement to any of our contracts, agreements or other documents, the reference may not be complete and you should refer to the exhibits that are a part of the registration statement or the exhibits to the reports or other documents incorporated by reference into this prospectus supplement for a copy of such contract, agreement or other document. Because we are subject to the information and reporting requirements of the Exchange Act, we file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the internet at the SEC's website at http://www.sec.gov.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to incorporate by reference information from other documents that we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus supplement. Information in this prospectus supplement supersedes information incorporated by reference that we filed with the SEC prior to the date of this prospectus supplement, while information that we file later with the SEC will automatically update and supersede the information in this prospectus supplement. We incorporate by reference into this prospectus supplement and the registration statement of which this prospectus supplement is a part the information or documents listed below that we have filed with the SEC (Commission File No. 001-36845):

- our Annual Report on Form 10-K, for the year ended December 31, 2019, filed with the SEC on April 6, 2020;
- our Definitive Proxy Statement on Schedule 14A, filed with the SEC on April 23, 2020;
- our Quarterly Report on Form 10-Q, for the quarter ended March 31, 2020, filed with the SEC on May 11, 2020;
- our Current Reports on Form 8-K filed with the SEC on January 29, 2020, February 7, 2020, February 18, 2020, March 10, 2020, March 20, 2020, March 30, 2020, March 30, 2020, April 8, 2020, May 11, 2020, May 20, 2020, June 12, 2020 and July 13, 2020; and
- the description of our common stock contained in our Registration Statement on Form 8-A filed on February 10, 2015, including any amendments or reports filed for the purpose of updating such description.

We also incorporate by reference any future filings (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items unless such Form 8-K expressly provides to the contrary) made with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, which will become a part of this prospectus supplement from the date that such documents are filed with the SEC. Information in such future filings updates and supplements the information provided in this prospectus supplement. Any statements in any such future filings will automatically be deemed to modify and supersede any information in any document we previously filed with the SEC that is incorporated or deemed to be incorporated herein by reference to the extent that statements in the later-filed document modify or replace such earlier statements. We will furnish without charge to each person, including any beneficial owner, to whom a prospectus supplement is delivered, upon written or oral request, a copy of any or all of the documents incorporated by reference into this prospectus supplement but not delivered with the prospectus supplement, including exhibits that are specifically incorporated by reference into such documents. You should direct any requests for documents to:

Bellerophon Therapeutics, Inc.
Chief Financial Officer,
184 Liberty Corner Road, Suite 302
Warren, New Jersey 07059
(908) 574-4770

PROSPECTUS

BELLEROPHON THERAPEUTICS, INC.

$150,000,000

COMMON STOCK
PREFERRED STOCK
DEBT SECURITIES
WARRANTS
RIGHTS
UNITS

This prospectus will allow us to issue, from time to time at prices and on terms to be determined at or prior to the time of the offering, up to $150,000,000 of any combination of the securities described in this prospectus, either individually or in units. We may also offer common stock or preferred stock upon conversion of or exchange for the debt securities; common stock or preferred stock or debt securities upon the exercise of warrants or rights.

This prospectus describes the general terms of these securities and the general manner in which these securities will be offered. We will provide you with the specific terms of any offering in one or more supplements to this prospectus. The prospectus supplements will also describe the specific manner in which these securities will be offered and may also supplement, update or amend information contained in this document. You should read this prospectus and any prospectus supplement, as well as any documents incorporated by reference into this prospectus or any prospectus supplement, carefully before you invest.

Our securities may be sold directly by us to you, through agents designated from time to time or to or through underwriters or dealers. For additional information on the methods of sale, you should refer to the section entitled “Plan of Distribution” in this prospectus and in the applicable prospectus supplement. If any underwriters or agents are involved in the sale of our securities with respect to which this prospectus is being delivered, the names of such underwriters or agents and any applicable fees, commissions or discounts and over-allotment options will be set forth in a prospectus supplement. The price to the public of such securities and the net proceeds that we expect to receive from such sale will also be set forth in a prospectus supplement.

Our common stock is listed on the Nasdaq Capital Market, under the symbol “BLPH.” On July 2, 2020, the last reported sale price of our common stock on the Nasdaq Capital Market was $12.96 per share.

Investing in our securities involves a high degree of risk. Before deciding whether to invest in our securities, you should consider carefully the risks that we have described on page 6 of this prospectus under the caption “Risk Factors.” We may include specific risk factors in supplements to this prospectus under the caption “Risk Factors.” This prospectus may not be used to sell our securities unless accompanied by a prospectus supplement.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is July 2, 2020.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, or SEC, utilizing a "shelf" registration process. Under this shelf registration process, we may offer shares of our common stock, preferred stock, various series of debt securities and/or warrants or rights to purchase any of such securities, either individually or in units, in one or more offerings, with a total value of up to $150,000,000. This prospectus provides you with a general description of the securities we may offer. Each time we offer a type or series of securities under this prospectus, we will provide a prospectus supplement that will contain specific information about the terms of that offering.

This prospectus does not contain all of the information included in the registration statement. For a more complete understanding of the offering of the securities, you should refer to the registration statement, including its exhibits. The prospectus supplement may also add, update or change information contained or incorporated by reference in this prospectus. However, no prospectus supplement will offer a security that is not registered and described in this prospectus at the time of its effectiveness. This prospectus, together with the applicable prospectus supplements and the documents incorporated by reference into this prospectus, includes all material information relating to the offering of securities under this prospectus. You should carefully read this prospectus, the applicable prospectus supplement, the information and documents incorporated herein by reference and the additional information under the heading "Where You Can Find More Information" before making an investment decision.

You should rely only on the information we have provided or incorporated by reference in this prospectus or any prospectus supplement. We have not authorized anyone to provide you with information different from that contained or incorporated by reference in this prospectus. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained or incorporated by reference in this prospectus. You must not rely on any unauthorized information or representation. This prospectus is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. You should assume that the information in this prospectus or any prospectus supplement is accurate only as of the date on the front of the document and that any information we have incorporated herein by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus or any sale of a security.

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference in the accompanying prospectus were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreements, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

This prospectus may not be used to consummate sales of our securities, unless it is accompanied by a prospectus supplement. To the extent there are inconsistencies between any prospectus supplement, this prospectus and any documents incorporated by reference, the document with the most recent date will control.

We were incorporated under the laws of the State of Delaware on October 17, 2013 under the name Ikaria Development LLC. We changed our name to Bellerophon Therapeutics LLC on January 27, 2014. On February 12, 2015, we converted from a Delaware limited liability company into a Delaware corporation and changed our name to Bellerophon Therapeutics, Inc. We currently have three wholly-owned subsidiaries: Bellerophon BCM LLC, a Delaware limited liability company; Bellerophon Pulse Technologies LLC, a Delaware limited liability company; and Bellerophon Services, Inc., a Delaware corporation.

Unless the context otherwise requires, "Bellerophon," "the Company," "we," "us," "our" and similar terms refer to Bellerophon Therapeutics, Inc.

PROSPECTUS SUMMARY

The following is a summary of what we believe to be the most important aspects of our business and the offering of our securities under this prospectus. We urge you to read this entire prospectus, including the more detailed consolidated financial statements, notes to the consolidated financial statements and other information incorporated by reference from our other filings with the Securities and Exchange Commission (the "SEC") or included in any applicable prospectus supplement. Investing in our securities involves risks. Therefore, carefully consider the risk factors set forth in any prospectus supplements and in our most recent annual and quarterly filings with the SEC, as well as other information in this prospectus and any prospectus supplements and the documents incorporated by reference herein or therein, before purchasing our securities. Each of the risk factors could adversely affect our business, operating results and financial condition, as well as adversely affect the value of an investment in our securities.

Overview

We are a clinical-stage therapeutics company focused on developing innovative products that address significant unmet medical needs in the treatment of cardiopulmonary and infectious lung diseases. Our focus is the continued development of our nitric oxide therapy for patients with pulmonary hypertension, or PH, using our proprietary pulsatile nitric oxide delivery platform, INOpulse.

INOpulse

Our INOpulse program is an extension of the technology used in hospitals to deliver continuous-flow inhaled nitric oxide. Use of inhaled nitric oxide is approved by the FDA and certain other regulatory authorities to treat persistent PH of the newborn. Ikaria has marketed continuous-flow inhaled nitric oxide as INOmax for hospital use in this indication since FDA approval in 1999. In October 2013, Ikaria transferred to us exclusive worldwide, royalty-free rights to develop and commercialize pulsed nitric oxide in PAH, PH associated with chronic obstructive pulmonary disease, or PH-COPD, and PH associated with idiopathic pulmonary fibrosis, or PH-IPF. In July 2015, we expanded the scope of our license to allow us to develop our INOpulse program for the treatment of CTEPH, PH-Sarc and PH associated with pulmonary edema from high altitude sickness with a royalty equal to 5% of net sales of any commercial products for these three additional indications. In November 2015, we entered into an amendment to our exclusive cross-license, technology transfer and regulatory matters agreement with Ikaria that included a royalty equal to 3% of net sales of any commercial products for PAH. In April 2018, we expanded the scope of our license from PH-IPF to PH in patients with Pulmonary Fibrosis (PH-PF), which includes idiopathic interstitial pneumonias, chronic hypersensitivity pneumonitis, occupational and environmental lung disease, with a royalty equal to 1% of net sales of any commercial products for PH-PF.

Our INOpulse program is built on scientific and technical expertise developed for the therapeutic delivery of inhaled nitric oxide. In 2010 and 2012, respectively, Ikaria submitted INDs for INOpulse for the treatment of patients with PAH and PH-COPD. PAH is a form of PH that is closely related to persistent PH of the newborn. These INDs were included in the assets that were transferred to us by Ikaria.

Nitric oxide is naturally produced and released by the lining of the blood vessels and results in vascular smooth muscle relaxation, an important factor in regulating blood pressure. Relaxation of the muscles of the blood vessels allows the heart to increase blood flow to tissues and organs of the body, including the lungs. When administered through inhalation, nitric oxide acts to selectively reduce pulmonary arterial pressure in the lungs with minimal effects on blood pressure outside of the lungs, an important safety consideration.

Inhaled nitric oxide is widely used in the hospital setting for the treatment of a variety of conditions and, as reported by Ikaria, over 600,000 patients have been treated with inhaled nitric oxide worldwide since its first such use. However, chronic outpatient use of this therapy has previously been limited by a lack of a safe and compact delivery system for outpatient use. We have designed our INOpulse device, which is the means by which inhaled nitric oxide is delivered to the patient, to be portable, which enables use by ambulatory patients on a daily basis inside or outside their homes. Our INOpulse device has a proprietary mechanism that delivers brief, targeted pulses of nitric oxide timed to occur at the beginning of a breath for delivery to the well-ventilated alveoli of the lungs, which minimizes the amount of drug required for treatment. We estimate that this, and the higher concentration of nitric oxide we use, reduces the volume of drug delivered to approximately 5% of the volume required for equivalent alveolar absorption using standard continuous flow delivery systems, and also reduces the amount of nitric oxide, as well as its by-product nitrogen dioxide, that is exhaled and released into the patient's environment. INOpulse is designed to automatically adjust nitric oxide delivery based on a patient's breathing pattern to deliver a constant and appropriate dose of the inhaled nitric oxide over time, independent of the patient's activity level, thus ensuring more consistent dosing of the nitric oxide to the alveoli of the lungs.

In our previous Phase 2 INOpulse clinical trials, we used the first generation INOpulse device, which we refer to as the INOpulse DS device. Beginning with our Phase 3 trial of INOpulse for PAH in 2016, we began using our second generation device, which we refer to as the INOpulse device. The INOpulse device has approximately the same dimensions as a paperback book and weighs approximately 2.5 pounds. The INOpulse device has a simple and intuitive user interface and a battery life of approximately 16 hours when recharged, which takes approximately four hours, and can be done while the patient sleeps. Based on the doses we have evaluated in our clinical trials, we expect that most patients will use one or two cartridges a day. The INOpulse device incorporates our proprietary triple-lumen nasal cannula, safety systems and proprietary software algorithms. The triple-lumen nasal cannula enables more accurate dosing of nitric oxide and minimizes infiltration of oxygen, which can react with nitric oxide to form nitrogen dioxide. Our triple-lumen nasal cannula consists of a thin, plastic tube that is divided into three channels from end-to-end, including at the prongs that are placed in the patient's nostrils, with one channel delivering inhaled nitric oxide, a second for breath detection and a third available for oxygen delivery. INOpulse is configured to be highly portable and compatible with long-term oxygen therapy, or LTOT, systems via nasal cannula delivery.

The INOpulse device has been well received by patients in the usability research we have conducted. In addition to the baseline testing on the original INOpulse DS device, we have conducted two rounds of testing with COPD and PAH patients to evaluate the user interface, loading mechanism, size, carrying bag and other features. In the usability research conducted, all eight patients who were experienced with the use of the INOpulse DS device responded positively to the modifications in the INOpulse device. We conducted two studies to assess the environmental and the expiratory concentration of nitrogen dioxide associated with use of the INOpulse delivery system. Both studies found that the nitrogen dioxide levels were below the National Ambient Air Quality Standards.

Our technology is based on patents we have exclusively licensed from Ikaria for the treatment of PAH, PH-COPD, PH-PF, CTEPH, PH-Sarc and PH associated with pulmonary edema from high altitude sickness which, collectively, we refer to as the Bellerophon indications. These include patents with respect to the pulsed delivery of nitric oxide to ensure a consistent dose over time, which expire as late as 2027 in the United States and as late as 2026 in certain other countries, as well as with respect to the special triple-lumen cannula that allows for safer and more accurate dosing of pulsed nitric oxide, which expires in 2033 in the United States and abroad. We have also licensed several other patent applications from Ikaria for certain of the innovations included in the INOpulse device, and certain of the resulting patents, if issued, would expire as late as 2030 in the United States. We have also expanded our patent portfolio by filing several Company-owned patent applications relating to the use of nitric oxide that will expire as late as 2039.

During January 2016, the European Patent Office issued a Notice of Intention to Grant a European Patent that provides protection for our INOpulse program. The patent, entitled "System of Administering a Pharmaceutical Gas to a Patient," covers the ability to provide a known amount of pharmaceutical gas to a patient regardless of the patient inspiration rate or volume and distinguishes the INOpulse® delivery system from others on the market. This patent was granted by the European Patent Office on March 30, 2016, and was subsequently validated in 30 European countries. Also during January 2016, we received European Conformity, or EC, Certification for our proprietary new, INOpulse® drug-device delivery system. This EC Certification grants CE marking on the INOpulse product, which confirms INOpulse compliance with the essential requirements of the relevant European health, safety and environment protection legislation of the European Union, or the EU. This certification covers the design, development and manufacture of inhaled pulsatile nitric oxide drug delivery systems including our triple-lumen cannula and application software.

INOpulse for PH-ILD

We are developing INOpulse for the treatment of pulmonary hypertension associated with interstitial lung disease, or PH-ILD, which includes PH associated with idiopathic pulmonary fibrosis, or PH-IPF, as well as other pulmonary fibrosing diseases. In 2017, we initiated a three-cohort, Phase 2b study of INOpulse for the treatment of patients with pulmonary fibrosis that are at risk of PH. Cohort 1 and cohort 2 have been completed, with INOpulse demonstrating statistically significant improvements in multiple clinically meaningful parameters versus placebo. In particular, cohort 2, which treated patients with iNO45 (45 mcg/kg IBW/hr), demonstrated statistically significant improvement in moderate to vigorous physical activity, or MVPA, as measured by actigraphy, versus placebo.

In consultation with the U.S. Food and Drug Administration, or the FDA, we have converted cohort 3 of the Phase 2b study into a pivotal Phase 3 study. This Phase 3 trial will study INOpulse at the iNO45 dose in patients with pulmonary fibrosis that are at risk of PH, with MVPA as the primary endpoint for approval.

We also recently completed an ancillary Phase 2 intra-patient dose escalation study that utilized right heart catheterization to assess the hemodynamic effect of INOpulse from a dose of inhaled nitric oxide, or iNO 30 to iNO 125 in PH-ILD subjects.

In the study, INOpulse achieved clinically and statistically significant improvements in pulmonary vascular resistance and mean pulmonary arterial pressure. Inhaled nitric oxide was well-tolerated with no safety concerns across doses.

INOpulse for COVID-19

We believe INOpulse may have applications in the treatment of patients with coronavirus disease 2019 (COVID-19). In prior academic studies, nitric oxide has demonstrated a potential benefit in the treatment of SARS patients. The SARS coronavirus (SARS-CoV), is 80% genetically similar to the coronavirus that causes COVID-19 (SARS-CoV-2). In academic studies, nitric oxide reduced viral load and replication in SARS-CoV infected cells and improved survival of SARS-CoV infected cells. In addition, inhaled nitric oxide improved oxygen saturation with less FiO2 required, reduced the need for assisted ventilation and prevented the proliferation of pneumonia lung infiltrates in SARS-CoV patients.

We believe INOpulse has potential to address a significant unmet need in the treatment of COVID-19 patients. Approximately 30% of hospitalized COVID-19 patients require intensive care with the majority requiring assisted ventilation. INOpulse delivery system is designed for outpatient use, which may be critical to preventing the further spread and alleviating the mounting impact on hospitals and intensive care units of COVID-19.

On March 19, 2020, the FDA granted emergency expanded access to allow for our proprietary iNO delivery system, INOpulse®, to immediately be used as supportive treatment for a patient with COVID-19 under the care and supervision of the patient's physician. The clinical goal of this experimental treatment is to avert the hospitalized patient's disease progression and avoid the need to perform intubation. This emergency expanded access from the FDA was granted on a named patient basis and we have treated over 50 patients with COVID-19.

In April 2020, we submitted an IND to the FDA to study the iNO delivery system for the treatment of patients infected with COVID-19. The proposed randomized, placebo controlled study called PULSE-CVD19-001, will evaluate the efficacy and safety of INOpulse in patients diagnosed with COVID-19 who require supplemental oxygen before the disease progresses to necessitate mechanical ventilation support. The PULSE-CVD19-001 protocol utilizes an adaptive design and aims to enroll up to 500 patients with COVID-19 who will be treated with either INOpulse or placebo. The primary endpoint will assess the proportion of subjects that had respiratory failure or mortality, which should allow the trial to serve as a registrational study for approval. The IND was accepted by the FDA in May 2020, which allows us to initiate the Phase 3 study. In parallel, we have submitted for federal funding, through Biomedical Advanced Research and Development Authority, or BARDA, and National Institutes of Health, or NIH, to support the study. We may not receive funding from BARDA or the NIH, and if we do, any funding may not be sufficient to fund the trial. In addition, we may be obligated to grant access rights, such as march-in rights, to the U.S. government in connection with such funding.

INOpulse for PH-Sarc

We are also developing INOpulse for the treatment of PH associated with Sarcoidosis, or PH-Sarc. Sarcoidosis is a multi-system disease which is characterized by the growth of granulomas (inflammatory cells) in one or more organs. The most frequent organs involved are the lungs and lymph nodes within the chest. Pulmonary hypertension may be present in as many as 74% of patients depending on how the pulmonary hypertension, or PH, is defined. The presence of PH in sarcoidosis is associated with a poor prognosis. There are a number of different mechanisms linking PH with sarcoidosis. The primary treatment for sarcoidosis is corticosteroids; however, the outcome of this treatment on the PH is unclear. There is no approved therapy for PH associated with sarcoidosis. Various PAH treatments have been tried including iNO and IV prostacyclin with some clinical and functional improvement. We are conducting a Phase 2a dose escalation design that will utilize right heart catheterization to assess the hemodynamic effect of INOpulse from a dose of iNO 30 to iNO 125 in PH-Sarc subjects. We expect to report results from this study in the second half of 2020.

INOpulse for PH-COPD

We are developing INOpulse for the treatment of pulmonary hypertension associated with chronic obstructive pulmonary disease, or PH-COPD. We have completed Phase 2 and Phase 2a studies of INOpulse for the treatment of PH-COPD. While we have a defined pathway for the conduct of a Phase 2b study, we are not currently enrolling patients in this trial. We continue to evaluate alternatives for the funding and timing of this program.

Our Strategy

Our goal is to become a leader in developing and commercializing innovative products that address significant unmet medical needs in the treatment of cardiopulmonary and infectious lung diseases. The key elements of our strategy to achieve this goal include:

- *Advance the clinical development of INOpulse.* One of our lead indications for our product candidate is INOpulse for PH-ILD. We have completed our Phase 2b PH-PF program for INOpulse, which included 85 patients in two cohorts to evaluate two different doses of iNO for periods of eight to 16 weeks. We have also completed Phase 2 studies for INOpulse in each of PH-ILD to evaluate the acute hemodynamic benefit and PH-COPD to evaluate the effect of chronic use on exercise capacity and initiated a Phase 2 dose escalation study for PH-Sarc.

- *Leverage our historical core competencies to expand our pipeline.* Our employees have years of institutional experience in the use of inhaled nitric oxide in treating PH and in the development of drug-device combination product candidates. If we successfully advance INOpulse, we expect to develop INOpulse for treatment of CTEPH and PH associated with pulmonary edema from high altitude sickness and, subject to obtaining additional license rights from Ikaria, potentially other outpatient PH indications. Our longer-term vision is to identify and opportunistically in-license innovative therapies that are at the intersection of drugs and devices and to develop and commercialize these product candidates.

- *Build commercial infrastructure in select markets.* As we near completion of the development of our product candidates, we may build a commercial infrastructure to enable us to market and sell certain of our product candidates with a specialized sales force and to retain co-promotion or similar rights, when feasible, in indications requiring a larger commercial infrastructure. While we may partner with third parties to commercialize our product candidates in certain countries, we may also choose to establish commercialization capabilities in select countries outside the United States.

Corporate Information

We were incorporated under the laws of the State of Delaware on October 17, 2013 under the name Ikaria Development LLC. We changed our name to Bellerophon Therapeutics LLC on January 27, 2014. On February 12, 2015, we converted from a Delaware limited liability company into a Delaware corporation and changed our name to Bellerophon Therapeutics, Inc. We currently have three wholly-owned subsidiaries: Bellerophon BCM LLC, a Delaware limited liability company; Bellerophon Pulse Technologies LLC, a Delaware limited liability company; and Bellerophon Services, Inc., a Delaware corporation. Our website address is www.bellerophon.com. The information contained on, or that can be accessed through, our website does not constitute part of this prospectus. We have included our website address in this prospectus solely as an inactive textual reference.

Our executive offices are located at 184 Liberty Corner Road, Suite 302, Warren, New Jersey 07059, and our telephone number is (908) 574-4770.

Offerings Under This Prospectus

Under this prospectus, we may offer shares of our common stock, preferred stock, various series of debt securities and/or warrants or rights to purchase any of such securities, either individually or in units, with a total value of up to $150,000,000, from time to time at prices and on terms to be determined by market conditions at the time of the offering. This prospectus provides you with a general description of the securities we may offer. Each time we offer a type or series of securities under this prospectus, we will provide a prospectus supplement that will describe the specific amounts, prices and other important terms of the securities, including, to the extent applicable:

The prospectus supplement also may add, update or change information contained in this prospectus or in documents we have incorporated by reference into this prospectus. However, no prospectus supplement will fundamentally change the terms that are set forth in this prospectus or offer a security that is not registered and described in this prospectus at the time of its effectiveness.

We may sell the securities directly to investors or to or through agents, underwriters or dealers. We, and our agents or underwriters, reserve the right to accept or reject all or part of any proposed purchase of securities. If we offer securities through agents or underwriters, we will include in the applicable prospectus supplement:

- the names of those agents or underwriters;
- applicable fees, discounts and commissions to be paid to them;
- details regarding over-allotment options, if any; and
- the net proceeds to us.

This prospectus may not be used to consummate a sale of any securities unless it is accompanied by a prospectus supplement.

RISK FACTORS

Please carefully consider the risk factors described in our periodic reports filed with the SEC, which are incorporated by reference in this prospectus. Before making an investment decision, you should carefully consider these risks as well as other information we include or incorporate by reference in this prospectus or include in any applicable prospectus supplement. Additional risks and uncertainties not presently known to us or that we deem currently immaterial may also impair our business operations or adversely affect our results of operations or financial condition.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements that involve substantial risks and uncertainties. All statements, other than statements of historical facts, contained in this prospectus, including statements regarding our future results of operations and financial position, business strategy and plans and objectives of management for future operations, are forward-looking statements. The words "may," "will," "should," "expects," "plans," "anticipates," "could," "intends," "target," "projects," "contemplates," "believes," "estimates," "predicts," "potential" or "continue" or the negative of these terms or other similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words.

The forward-looking statements in this prospectus include, among other things, statements about:

- the timing of the ongoing and expected clinical trials of our product candidates, including statements regarding the timing of completion of the trials and the respective periods during which the results of the trials will become available;
- INOpulse® may prove not to be an effective treatment for COVID-19 or approved for marketing by the FDA;
- our ability to obtain adequate financing to meet our future operational and capital needs;
- the timing of and our ability to obtain marketing approval of our product candidates, and the ability of our product candidates to meet existing or future regulatory standards;
- our ability to comply with government laws and regulations;
- our commercialization, marketing and manufacturing capabilities and strategy;
- our estimates regarding the potential market opportunity for our product candidates;
- the timing of or our ability to enter into partnerships to market and commercialize our product candidates;
- the rate and degree of market acceptance of any product candidate for which we receive marketing approval;
- our intellectual property position;

- our estimates regarding expenses, future revenues, capital requirements and needs for additional funding and our ability to obtain additional funding;
- the success of competing treatments;
- our competitive position; and
- our expectations regarding the time during which we will be an “emerging growth company” under the Jumpstart Our Business Startups Act of 2012.

We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. We have included important factors in the cautionary statements included in this prospectus, particularly in the “Risk Factors” section, as well as the risk factors incorporated by reference in this prospectus, discussed under “Item 1A-Risk Factors” in our Annual Report on Form 10-K for the fiscal year ended December 31, 2019, and under similar headings in our subsequently filed quarterly reports on Form 10-Q and annual reports on Form 10-K, that could cause actual results or events to differ materially from the forward-looking statements that we make. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments we may make.

You should read this prospectus and the documents that we have filed as exhibits to this prospectus completely and with the understanding that our actual future results may be materially different from what we expect. We do not assume any obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by applicable law.

This prospectus includes statistical and other industry and market data that we obtained from industry publications and research, surveys and studies conducted by third parties. Industry publications and third-party research,surveys and studies generally indicate that their information has been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information.

RATIO OF EARNINGS TO FIXED CHARGES

Any time debt securities are offered pursuant to this prospectus, we will provide a table setting forth our ratio of earnings to fixed charges on a historical basis in the applicable prospectus supplement, if required.

USE OF PROCEEDS

We cannot assure you that we will receive any proceeds in connection with securities which may be offered pursuant to this prospectus. Unless otherwise indicated in the applicable prospectus supplement, we intend to use any net proceeds from the sale of securities under this prospectus for our operations and for other general corporate purposes, including, but not limited to, our internal research and development programs and the development of new programs, general working capital and possible future acquisitions. We have not determined the amounts we plan to spend on any of the areas listed above or the timing of these expenditures. As a result, our management will have broad discretion to allocate the net proceeds, if any, we receive in connection with securities offered pursuant to this prospectus for any purpose. Pending application of the net proceeds as described above, we may initially invest the net proceeds in short-term, investment-grade, interest-bearing securities or apply them to the reduction of short-term indebtedness.

PLAN OF DISTRIBUTION

General Plan of Distribution

We may offer securities under this prospectus from time to time pursuant to underwritten public offerings, negotiated transactions, block trades or a combination of these methods. We may sell the securities (1) through underwriters or dealers, (2) through agents or (3) directly to one or more purchasers, or through a combination of such methods. We may distribute the securities from time to time in one or more transactions at:

- a fixed price or prices, which may be changed from time to time;
- market prices prevailing at the time of sale;
- prices related to the prevailing market prices; or
- negotiated prices.

We may directly solicit offers to purchase the securities being offered by this prospectus. We may also designate agents to solicit offers to purchase the securities from time to time. We will name in a prospectus supplement any underwriter or agent involved in the offer or sale of the securities.

If we utilize a dealer in the sale of the securities being offered by this prospectus, we will sell the securities to the dealer, as principal. The dealer may then resell the securities to the public at varying prices to be determined by the dealer at the time of resale.

If we utilize an underwriter in the sale of the securities being offered by this prospectus, we will execute an underwriting agreement with the underwriter at the time of sale, and we will provide the name of any underwriter in the prospectus supplement which the underwriter will use to make re-sales of the securities to the public. In connection with the sale of the securities, we, or the purchasers of the securities for whom the underwriter may act as agent, may compensate the underwriter in the form of underwriting discounts or commissions. The underwriter may sell the securities to or through dealers, and the underwriter may compensate those dealers in the form of discounts, concessions or commissions.

With respect to underwritten public offerings, negotiated transactions and block trades, we will provide in the applicable prospectus supplement information regarding any compensation we pay to underwriters, dealers or agents in connection with the offering of the securities, and any discounts, concessions or commissions allowed by underwriters to participating dealers. Underwriters, dealers and agents participating in the distribution of the securities may be deemed to be underwriters within the meaning of the Securities Act of 1933, as amended, or the Securities Act, and any discounts and commissions received by them and any profit realized by them on resale of the securities may be deemed to be underwriting discounts and commissions. We may enter into agreements to indemnify underwriters, dealers and agents against civil liabilities, including liabilities under the Securities Act, or to contribute to payments they may be required to make in respect thereof.

If so indicated in the applicable prospectus supplement, we will authorize underwriters or other persons acting as our agents to solicit offers by certain institutions to purchase securities from us pursuant to delayed delivery contracts providing for payment and delivery on the date stated in the prospectus supplement. Each contract will be for an amount not less than, and the aggregate amount of securities sold pursuant to such contracts shall not be less nor more than, the respective amounts stated in the prospectus supplement. Institutions with whom the contracts, when authorized, may be made include commercial and savings banks, insurance companies, pension funds, investment companies, educational and charitable institutions and other institutions, but shall in all cases be subject to our approval. Delayed delivery contracts will not be subject to any conditions except that:

- the purchase by an institution of the securities covered under that contract shall not at the time of delivery be prohibited under the laws of the jurisdiction to which that institution is subject; and
- if the securities are also being sold to underwriters acting as principals for their own account, the underwriters shall have purchased such securities not sold for delayed delivery. The underwriters and other persons acting as our agents will not have any responsibility in respect of the validity or performance of delayed delivery contracts.

Shares of our common stock sold pursuant to the registration statement of which this prospectus is a part will be authorized for quotation and trading on the Nasdaq Capital Market. The applicable prospectus supplement will contain information, where applicable, as to any other listing, if any, on the Nasdaq Capital Market or any securities market or other securities exchange of the securities covered by the prospectus supplement. We can make no assurance as to the liquidity of or the existence of trading markets for any of the securities.

In order to facilitate the offering of the securities, certain persons participating in the offering may engage in transactions that stabilize, maintain or otherwise affect the price of the securities. This may include over-allotments or short sales of the securities, which involve the sale by persons participating in the offering of more securities than we sold to them. In these circumstances, these persons would cover such over-allotments or short positions by making purchases in the open market or by exercising their over-allotment option. In addition, these persons may stabilize or maintain the price of the securities by bidding for or purchasing the applicable security in the open market or by imposing penalty bids, whereby selling concessions allowed to dealers participating in the offering may be reclaimed if the securities sold by them are repurchased in connection with stabilization transactions. The effect of these transactions may be to stabilize or maintain the market price of the securities at a level above that which might otherwise prevail in the open market. These transactions may be discontinued at any time.

In compliance with the guidelines of the Financial Industry Regulatory Authority, Inc., or FINRA, the maximum consideration or discount to be received by any FINRA member or independent broker dealer may not exceed 8% of the aggregate amount of the securities offered pursuant to this prospectus and any applicable prospectus supplement.

The underwriters, dealers and agents may engage in other transactions with us, or perform other services for us, in the ordinary course of their business.

DESCRIPTION OF CAPITAL STOCK

As of June 24, 2020, we had one class of securities registered under Section 12(b) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"): Common Stock, $0.01 par value per share. Each of the Company's securities registered under Section 12(b) of the Exchange Act are listed on The Nasdaq Capital Market.

General

The following description of our capital stock and provisions of our restated certificate of incorporation and amended and restated bylaws are summaries and are qualified by reference to the restated certificate of incorporation and the amended and restated bylaws that are on file with the SEC.

Our authorized capital stock consists of 200,000,000 shares of our common stock, $0.01 par value per share, and 5,000,000 shares of our preferred stock, $0.01 par value per share, all of which preferred stock is undesignated.

As of June 19, 2020, we had issued and outstanding:

- 9,497,777 shares of our common stock held by 190 stockholders of record;
- options to purchase 666,303 shares of our common stock, at a weighted average exercise price of $24.61 per share; and
- warrants to purchase 2,028,626 shares of our common stock, at a weighted average exercise price of $16.61 per share.

On February 5, 2020, we effected a one-for-fifteen (1:15) reverse stock split of our outstanding common stock. As a result of the reverse stock split, every fifteen (15) shares of our pre-reverse split common stock were combined and reclassified into one (1) share of common stock without any change in the par value per share. The reverse stock split did not modify the rights or preferences of the common stock. No fractional shares were issued as a result of the reverse stock split. Stockholders who otherwise held fractional shares of our common stock as a result of the reverse stock split received a de minimis cash payment in lieu of such fractional shares.

Common Stock

Holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders and do not have cumulative voting rights. Each election of directors by our stockholders will be determined by a plurality of the votes cast by the stockholders entitled to vote on the election. Holders of common stock are entitled to receive proportionately any dividends as may be declared by our board of directors, subject to any preferential dividend rights of outstanding preferred stock.

In the event of our liquidation or dissolution, the holders of our common stock are entitled to receive proportionately all assets available for distribution to stockholders after the payment of all debts and other liabilities and subject to the prior rights of any of our outstanding preferred stock. Holders of our common stock have no preemptive, subscription, redemption or conversion rights. The rights, preferences and privileges of holders of our common stock are subject to and may be adversely affected by the rights of the holders of shares of any series of our preferred stock that we may designate and issue in the future.

Preferred Stock

Under the terms of our restated certificate of incorporation, our board of directors is authorized to issue shares of preferred stock in one or more series without stockholder approval. Our board of directors has the discretion to determine the rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, of each series of preferred stock.

The purpose of authorizing our board of directors to issue preferred stock and determine its rights and preferences is to eliminate delays associated with a stockholder vote on specific issuances. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions, future financings and other corporate purposes, could have the effect of making it more difficult for a third party to acquire, or could discourage a third party from seeking to acquire, a majority of our outstanding voting stock. There are no shares of preferred stock currently outstanding, and we have no present plans to issue any shares of preferred stock.

Stockholders Agreements

New Mountain Stockholders Agreement

In February 2015, in connection with our IPO, we entered into a stockholders agreement withthe investment funds affiliated with New Mountain Capital, or the New Mountain Entities, which provides that the New Mountain Entities are entitled to designate one director for nomination to our board of directors, to designate one director to the board of directors (or equivalent governing body) of each of our subsidiaries and to appoint the lead director of our board of directors, in each case, for so long as the New Mountain Entities or certain of their respective assignees beneficially own (i) 50% or more of the sum of (a) the number of shares of our common stock that they owned immediately prior to the closing of our IPO and (b) the number of shares of common stock, if any, acquired following the closing of our IPO (subject to in each case adjustment in the event of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification or other similar change in our capitalization) and (ii) 15% or more of our common stock outstanding (as set forth on the cover of our then most recently filed annual report on Form 10-K or quarterly report on Form 10-Q). Subject to the same ownership thresholds, the director nominated by the New Mountain Entities is entitled to serve on each committee of our board of directors and of the board of directors (or equivalent governing body) of each of our subsidiaries and the consent of the New Mountain Entities is required to establish any new committee of our board of directors or the board of directors (or equivalent governing body) of any of our subsidiaries, in each case except to the extent prohibited by applicable law or applicable listing exchange rules.

The New Mountain Entities may assign their rights to designate one director for nomination to our board of directors, to designate a director to the board of directors (or equivalent governing body) of each of our subsidiaries and to appoint the lead director of our board of directors to a person who acquires, in a transaction other than a registered public offering or a sale pursuant to Rule 144 under the Securities Act, at least 50% of the aggregate number of shares of our common stock owned, directly or indirectly, by the New Mountain Entities as of immediately prior to such transaction.

In addition, the stockholders agreement provides that, we are required to obtain the prior written approval of the New Mountain Entities to take certain actions, including, among other things, actions to:

- consolidate or merge into or with any other person, sell, lease or transfer all or a significant portion of our assets or capital stock to another person or enter into any other similar business combination transaction, or effect a liquidation;
- authorize, issue, sell, offer for sale or solicit offers to buy any shares of our common stock or any convertible securities or any other equity or debt securities or rights to acquire any of our or our subsidiaries' equity or debt securities, subject to certain exceptions, including among other things, the issuance under our stock incentive plan of grants that have been approved by our board of directors (or a board committee) and at least one director appointed by the New Mountain Entities;
- incur indebtedness or refinance any indebtedness, in each case in an amount in excess of a specified threshold;
- hire or replace our chief executive officer; or
- agree or otherwise commit to do any of the foregoing (unless the commitment is conditioned on obtaining the approval of the New Mountain Entities).

These approval rights of the New Mountain Entities will terminate when the New Mountain Entities or certain of their respective assignees beneficially own either (i) less than 50% of the sum of (a) the aggregate number of shares of our common stock that they collectively owned immediately prior to the closing of our IPO and (b) the number of shares of our common stock, if any, acquired following the closing of our IPO (subject to in each case adjustment in the event of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification or similar changes in our capitalization) or (ii) less than 15% of our common stock outstanding (as set forth on the cover of our then most recently filed annual report on Form 10-K or quarterly report on Form 10-Q). As of June 19, 2020, the New Mountain Entities held approximately 10.6% of our outstanding common stock.

Linde Stockholders Agreement

In February 2015, in connection with our IPO, we also entered into a stockholders agreement with Linde North America, Inc., an indirect wholly-owned subsidiary of Linde AG, or Linde, which provides that Linde is entitled to designate one director for nomination to our board of directors and to designate one director to the board of directors (or equivalent governing body) of each of our subsidiaries, in each case, for so long as Linde or certain of its assignees beneficially own (i) 50% or more of the sum of (a) the number of shares of our common stock that they owned immediately prior to the closing of our IPO and (b) the number of shares of common stock, if any, acquired following the closing of our IPO (subject to in each case adjustment in the event of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification or other similar change in our capitalization) and (ii) 10% or more of our common stock outstanding (as set forth on the cover of our then most recently filed annual report on Form 10-K or quarterly report on Form 10-Q). Subject to the same ownership thresholds, the director designated by Linde is entitled to serve on each committee of our board of directors and of the board of directors (or equivalent governing body) of each of our subsidiaries and the consent of Linde is required to establish any new committee of our board of directors or the board of directors (or equivalent governing body) of any of our subsidiaries, in each case except to the extent prohibited by applicable law or applicable listing exchange rules.

Linde may assign its rights to designate one director for nomination to our board of directors and to designate a director for nomination to the board of directors (or equivalent governing body) of each of our subsidiaries to a person who acquires, in a transaction other than a registered public offering or a sale pursuant to Rule 144 under the Securities Act, at least 50% of the aggregate number of shares of our common stock owned, directly or indirectly, by Linde as of immediately prior to such transaction. As of June 19, 2020, Linde held approximately 3.7% of our outstanding common stock.

Delaware Anti-Takeover Law and Certain Charter and Bylaw Provisions

Delaware Law

We are subject to Section 203 of the Delaware General Corporation Law, which prohibits a publicly-held Delaware corporation from engaging in a business combination with an interested stockholder, generally a person which together with its affiliates owns, or within the last three years has owned, 15% of our voting stock, for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in a prescribed manner. Subject to certain exceptions, Section 203 prevents a publicly held Delaware corporation from engaging in a “business combination” with any “interested stockholder” for three years following the date that the person became an interested stockholder, unless either the interested stockholder attained such status with the approval of our board of directors, the business combination is approved by our board of directors and stockholders in a prescribed manner or the interested stockholder acquired at least 85% of our outstanding voting stock in the transaction in which it became an interested stockholder. A “business combination” includes, among other things, a merger or consolidation involving us and the “interested stockholder” and the sale of more than 10% of our assets. In general, an “interested stockholder” is any entity or person beneficially owning 15% or more of our outstanding voting stock and any entity or person affiliated with or controlling or controlled by such entity or person. The restrictions contained in Section 203 are not applicable to any of our existing stockholders that owned 15% or more of our outstanding voting stock upon the closing of our IPO.

Staggered Board; Removal of Directors

Our restated certificate of incorporation and our amended and restated bylaws divide our board of directors into three classes with staggered three-year terms. In addition, a director may be removed only for cause and only by the affirmative vote of the holders of at least 75% of the outstanding shares of our common stock. In addition, the authorized number of our directors may be changed only by resolution of our directors, and any vacancy on our board of directors, including a vacancy resulting from an enlargement of our board of directors, may be filled only by vote of a majority of our directors then in office.

The classification of our board of directors and the limitations on the ability of our stockholders to change the authorized number of directors, remove directors and fill vacancies could make it more difficult for a third party to acquire, or discourage a third party from seeking to acquire, control of our company.

Stockholder Action; Special Meeting of Stockholders; Advance Notice Requirements for Stockholder Proposals and Director Nominations

Our restated certificate of incorporation and our amended and restated bylaws provide that any action required or permitted to be taken by our stockholders at an annual meeting or special meeting of stockholders may only be taken if it is properly brought before such meeting and may not be taken by written action in lieu of a meeting. Our restated certificate of incorporation and our amended and restated bylaws also provide that, except as otherwise required by law, special meetings of the stockholders can only be called by the chairman of our board of directors, our chief executive officer or our board of directors. In addition, our amended and restated bylaws establish an advance notice procedure for stockholder proposals to be brought before an annual meeting of stockholders, including proposed nominations of candidates for election to our board of directors. Stockholders at an annual meeting may only consider proposals or nominations specified in the notice of meeting or brought before the meeting by or at the direction of our board of directors, or by a stockholder of record on the record date for the meeting, who is entitled to vote at the meeting and who has delivered timely written notice in proper form to our secretary of the stockholder's intention to bring such business before the meeting. These provisions could have the effect of delaying until the next stockholder meeting stockholder actions that are favored by the holders of a majority of our outstanding voting securities. These provisions also could discourage a third party from making a tender offer for our common stock, because even if it acquired a majority of our outstanding voting stock, it would be able to take action as a stockholder, such as electing new directors or approving a merger, only at a duly called stockholder meeting and not by written consent.

Super-Majority Voting

The Delaware General Corporation Law provides generally that the affirmative vote of a majority of the shares entitled to vote on any matter is required to amend a corporation's certificate of incorporation or bylaws, unless a corporation's certificate of incorporation or bylaws, as the case may be, requires a greater percentage. Our amended and restated bylaws may be amended or repealed by a majority vote of our board of directors or the affirmative vote of the holders of at least 75% of the votes that all our stockholders would be entitled to cast in any annual election of directors. In addition, the affirmative vote of the holders of at least 75% of the votes that all our stockholders would be entitled to cast in any election of directors is required to amend, repeal or adopt any provisions inconsistent with any of the provisions of our restated certificate of incorporation described above.

Exclusive Forum

Our restated certificate of incorporation provides that the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for (i) any derivative action or proceeding brought on behalf of our company, (ii) any action asserting a claim of breach of a fiduciary duty owed by any of our directors or officers to the company or our stockholders, (iii) any action asserting a claim against our company arising pursuant to any provision of the Delaware General Corporation Law or our restated certificate of incorporation or amended and restated bylaws or (iv) any action asserting a claim against our company or any of our directors or officers governed by the internal affairs doctrine. Although our restated certificate of incorporation contains the provision described above, it is possible that a court could rule that such a provision is inapplicable for a particular claim or action or that such provision is unenforceable.

Registration Rights

We have entered into a registration rights agreement with certain holders of our common stock, including our 5% stockholders and their affiliates and entities affiliated with our directors. The registration rights agreement provides these holders the right to demand that we file a registration statement or request that their shares be covered by a registration statement that we are otherwise filing.

Demand Registration Rights

At any time or from time to time, subject to specified limitations set forth in the registration rights agreement and to any lock-up period, the New Mountain Entities or the holders of 10% of our then outstanding shares of common stock, may at any time demand in writing that we register all or a portion of the shares having rights under the registration rights agreement, which we refer to as the registrable shares, under the Securities Act if the total amount of registrable shares registered have an aggregate offering price of at least $10.0 million, unless the registration is of the balance of the registrable shares held by all the parties to the registration rights agreement. We are not obligated to effect a registration pursuant to this provision on more than six occasions in the case of demands made by the New Mountain Entities, or on more than two occasions in the aggregate in the case of demands made by the other parties to the agreement, and we are not obligated to effect a registration pursuant to this provision within 90 days of the effective date of any other registration statement that we may file pursuant to a demand registration.

Form S-3 Registration Rights

In addition, at any time after we become eligible to file a registration statement on Form S-3, subject to specified limitations set forth in the registration rights agreement, either the New Mountain Entities or the holders in the aggregate of 10% or more of our outstanding shares of common stock may demand in writing that we register on Form S-3 all or a portion of the registrable shares so long as the total amount of registrable shares being registered have an aggregate offering price of at least $10.0 million, unless the registration is of the balance of the registrable shares held by all the parties to the registration rights agreement.

Incidental Registration Rights

If we propose to file a registration statement under the Securities Act, subject to certain exceptions set forth in the registration rights agreement, the holders of registrable shares will be entitled to notice of the registration and, subject to specified exceptions in the case of an underwritten offering, including market conditions, have the right to require us to register all or a portion of the registrable shares then held by them.

Underwritten Public Offering

In the event that any registration in which the holders of registrable shares participate pursuant to the registration rights agreement is an underwritten public offering, we agree to enter into an underwriting agreement containing customary representation and warranties and covenants, including without limitation customary provisions with respect to indemnification of the underwriters of such offering. Holders of registrable securities must agree to any such underwriting agreement as a condition to participation in the offering. If the total number of shares, including registrable shares, requested by holders to be included in such offering exceeds the largest number of shares to be sold (other than by us) that the underwriters believe can be sold in an orderly manner in such underwritten public offering, then we shall include shares in the offering in accordance with the priority guidelines set forth in the registration rights agreement.

Expenses and Indemnification

Pursuant to the registration rights agreement, we are required to pay all registration expenses, including registration and filing fees, exchange listing fees, printing expenses and accounting fees and the fees and expenses of one counsel to represent the selling stockholders, other than any underwriting discounts and commissions, that are related to any demand or incidental registration described above. The registration rights agreement contains customary cross-indemnification provisions, pursuant to which we are obligated to indemnify the selling stockholders in the event of material misstatements or omissions in the registration statement attributable to us, and the selling stockholders are obligated to provide an undertaking pursuant to which they will indemnify us for material misstatements or omissions in the registration statement attributable to them.

Corporate Opportunity

Our restated certificate of incorporation provides that the doctrine of "corporate opportunity" does not apply to any of our stockholders or directors, other than in the case of a corporate opportunity that is offered to such person in writing solely in his or her capacity as our director, officer or employee. Accordingly, our stockholders and directors and their respective representatives have no duty to communicate or present corporate opportunities to us and have the right to either hold any corporate opportunity for its (and its representatives') own account and benefit or to recommend, assign or otherwise transfer such corporate opportunity to persons other than us, other than in the case of a corporate opportunity that is offered to such person in writing solely in his or her capacity as our director, officer or employee. As a result, our stockholders, directors and their respective affiliates will not be prohibited from investing in competing businesses or doing business with our customers.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Computershare Trust Company, N.A.

Nasdaq Capital Market Listing

Our common stock is publicly traded on the Nasdaq Capital Market under the symbol "BLPH".

DESCRIPTION OF DEBT SECURITIES

The following description, together with the additional information we include in any applicable prospectus supplements, summarizes the material terms and provisions of the debt securities that we may offer under this prospectus. While the terms we have summarized below will apply generally to any future debt securities we may offer pursuant to this prospectus, we will describe the particular terms of any debt securities that we may offer in more detail in the applicable prospectus supplement. If we so indicate in a prospectus supplement, the terms of any debt securities offered under such prospectus supplement may differ from the terms we describe below, and to the extent the terms set forth in a prospectus supplement differ from the terms described below, the terms set forth in the prospectus supplement shall control.

We may sell from time to time, in one or more offerings under this prospectus, debt securities, which may be senior or subordinated. We will issue any such senior debt securities under a senior indenture that we will enter into with a trustee to be named in the senior indenture. We will issue any such subordinated debt securities under a subordinated indenture, which we will enter into with a trustee to be named in the subordinated indenture. We use the term “indentures” to refer to either the senior indenture or the subordinated indenture, as applicable. The indentures will be qualified under the Trust Indenture Act of 1939, as in effect on the date of the indenture. We use the term “debenture trustee” to refer to either the trustee under the senior indenture or the trustee under the subordinated indenture, as applicable.

The following summaries of material provisions of the senior debt securities, the subordinated debt securities and the indentures are subject to, and qualified in their entirety by reference to, all the provisions of the indenture applicable to a particular series of debt securities.

General

Each indenture will provide that debt securities may be issued from time to time in one or more series and may be denominated and payable in foreign currencies or units based on or relating to foreign currencies. Neither indenture will limit the amount of debt securities that may be issued thereunder, and each indenture will provide that the specific terms of any series of debt securities shall be set forth in, or determined pursuant to, an authorizing resolution and/or a supplemental indenture, if any, relating to such series.

We will describe in each prospectus supplement the following terms relating to a series of debt securities:

- the title or designation;
- the aggregate principal amount and any limit on the amount that may be issued;
- the currency or units based on or relating to currencies in which debt securities of such series are denominated and the currency or units in which principal or interest or both will or may be payable;
- whether we will issue the series of debt securities in global form, the terms of any global securities and who the depositary will be;
- the maturity date and the date or dates on which principal will be payable;
- the interest rate, which may be fixed or variable, or the method for determining the rate and the date interest will begin to accrue, the date or dates interest will be payable and the record dates for interest payment dates or the method for determining such dates;
- whether or not the debt securities will be secured or unsecured, and the terms of any secured debt;
- the terms of the subordination of any series of subordinated debt;
- the place or places where payments will be payable;
- our right, if any, to defer payment of interest and the maximum length of any such deferral period;
- the date, if any, after which, and the price at which, we may, at our option, redeem the series of debt securities pursuant to any optional redemption provisions;

- the date, if any, on which, and the price at which we are obligated, pursuant to any mandatory sinking fund provisions or otherwise, to redeem, or at the holder's option to purchase, the series of debt securities;
- whether the indenture will restrict our ability to pay dividends, or will require us to maintain any asset ratios or reserves;
- whether we will be restricted from incurring any additional indebtedness;
- a discussion on any material or special U.S. federal income tax considerations applicable to a series of debt securities;
- the denominations in which we will issue the series of debt securities, if other than denominations of $1,000 and any integral multiple thereof; and
- any other specific terms, preferences, rights or limitations of, or restrictions on, the debt securities.

We may issue debt securities that provide for an amount less than their stated principal amount to be due and payable upon declaration of acceleration of their maturity pursuant to the terms of the indenture. We will provide you with information on the federal income tax considerations and other special considerations applicable to any of these debt securities in the applicable prospectus supplement.

Conversion or Exchange Rights

We will set forth in the prospectus supplement the terms, if any, on which a series of debt securities may be convertible into or exchangeable for our common stock or our other securities. We will include provisions as to whether conversion or exchange is mandatory, at the option of the holder or at our option. We may include provisions pursuant to which the number of shares of our common stock or our other securities that the holders of the series of debt securities receive would be subject to adjustment.

Information Concerning the Debenture Trustee

The debenture trustee, other than during the occurrence and continuance of an event of default under the applicable indenture, undertakes to perform only those duties as are specifically set forth in the applicable indenture. Upon an event of default under an indenture, the debenture trustee under such indenture must use the same degree of care as a prudent person would exercise or use in the conduct of his or her own affairs. Subject to this provision, the debenture trustee is under no obligation to exercise any of the powers given it by the indentures at the request of any holder of debt securities unless it is offered reasonable security and indemnity against the costs, expenses and liabilities that it might incur.

Payment and Paying Agents

Unless we otherwise indicate in the applicable prospectus supplement, we will make payment of the interest on any debt securities on any interest payment date to the person in whose name the debt securities, or one or more predecessor securities, are registered at the close of business on the regular record date for the interest.

We will pay principal of and any premium and interest on the debt securities of a particular series at the office of the paying agents designated by us, except that unless we otherwise indicate in the applicable prospectus supplement, we will make interest payments by check which we will mail to the holder. Unless we otherwise indicatein a prospectus supplement, we will designate the corporate trust office of the debenture trustee in the City of New York as our sole paying agent for payments with respect to debt securities of each series. We will name in the applicable prospectus supplement any other paying agents that we initially designate for the debt securities of a particular series. We will maintain a paying agent in each place of payment for the debt securities of a particular series.

All money we pay to a paying agent or the debenture trustee for the payment of the principal of or any premium or interest on any debt securities which remains unclaimed at the end of two years after such principal, premium or interest has become due and payable will be repaid to us, and the holder of the security thereafter may look only to us for payment thereof.

Governing Law

The indentures and the debt securities will be governed by and construed in accordance with the laws of the State of New York, except to the extent that the Trust Indenture Act is applicable.

Subordination of Subordinated Debt Securities

Our obligations pursuant to any subordinated debt securities will be unsecured and will be subordinate and junior in priority of payment to certain of our other indebtedness to the extent described in a prospectus supplement. The subordinated indenture does not limit the amount of senior indebtedness we may incur. It also does not limit us from issuing any other secured or unsecured debt.

DESCRIPTION OF WARRANTS

General

We may issue warrants to our stockholders to purchase shares of our common stock. We may offer warrants separately or together with one or more debt securities, common stock or rights, or any combination of those securities in the form of units, as described in the applicable prospectus supplement. Each series of warrants will be issued under a separate warrant agreement to be entered into between us and a bank or trust company, as warrant agent. The warrant agent will act solely as our agent in connection with the certificates relating to the rights of the series of certificates and will not assume any obligation or relationship of agency or trust for or with any holders of rights certificates or beneficial owners of rights. The following description sets forth certain general terms and provisions of the rights to which any prospectus supplement may relate. The particular terms of the warrant to which any prospectus supplement may relate and the extent, if any, to which the general provisions may apply to the rights so offered will be described in the applicable prospectus supplement. To the extent that any particular terms of the warrant, warrant agreement or warrant certificates described in a prospectus supplement differ from any of the terms described below, then the terms described below will be deemed to have been superseded by that prospectus supplement. We encourage you to read the applicable warrant agreement and warrant certificate for additional information before you decide whether to purchase any of our rights.

We will provide in a prospectus supplement the following terms of the warrants being issued:

- the specific designation and aggregate number of, and the price at which we will issue, the warrants;
- the currency or currency units in which the offering price, if any, and the exercise price are payable;
- the designation, amount and terms of the securities purchasable upon exercise of the warrants;
- if applicable, the exercise price for shares of our common stock and the number of shares of common stock to be received upon exercise of the warrants;
- if applicable, the exercise price for shares of our preferred stock, the number of shares of preferred stock to be received upon exercise, and a description of that series of our preferred stock;
- if applicable, the exercise price for our debt securities, the amount of debt securities to be received upon exercise, and a description of that series of debt securities;
- the date on which the right to exercise the warrants will begin and the date on which that right will expire or, if you may not continuously exercise the warrants throughout that period, the specific date or dates on which you may exercise the warrants;
- whether the warrants will be issued in fully registered form or bearer form, in definitive or global form or in any combination of these forms, although, in any case, the form of a warrant included in a unit will correspond to the form of the unit and of any security included in that unit;

- any applicable material U.S. federal income tax consequences;
- the identity of the warrant agent for the warrants and of any other depositaries, execution or paying agents, transfer agents, registrars or other agents;
- the proposed listing, if any, of the warrants or any securities purchasable upon exercise of the warrants on any securities exchange;
- if applicable, the date from and after which the warrants and the common stock, preferred stock and/or debt securities will be separately transferable;
- if applicable, the minimum or maximum amount of the warrants that may be exercised at any one time;
- information with respect to book-entry procedures, if any;
- the anti-dilution provisions of the warrants, if any;

- any redemption or call provisions;
- whether the warrants may be sold separately or with other securities as parts of units; and
- any additional terms of the warrants, including terms, procedures and limitations relating to the exchange and exercise of the warrants.

Each warrant will entitle the holder of rights to purchase for cash the principal amount of shares of common stock or other securities at the exercise price provided in the applicable prospectus supplement. Warrants may beexercised at any time up to the close of business on the expiration date for the rights provided in the applicable prospectus supplement.

Holders may exercise warrants as described in the applicable prospectus supplement. Upon receipt of payment and the warrant certificate properly completed and duly executed at the corporate trust office of the rights agent or any other office indicated in the prospectus supplement, we will, as soon as practicable, forward the shares of common stock or other securities, as applicable, purchasable upon exercise of the rights. If less than all of the warrants issued in any rights offering are exercised, we may offer any unsubscribed securities directly to persons other than stockholders, to or through agents, underwriters or dealers or through a combination of such methods, including pursuant to standby arrangements, as described in the applicable prospectus supplement.

Warrant Agent

The warrant agent for any warrants we offer will be set forth in the applicable prospectus supplement.

DESCRIPTION OF RIGHTS

General

We may issue rights to our stockholders to purchase shares of our common stock or the other securities described in this prospectus. We may offer rights separately or together with one or more additional rights, debt securities, common stock or warrants, or any combination of those securities in the form of units, as described in the applicable prospectus supplement. Each series of rights will be issued under a separate rights agreement to be entered into between us and a bank or trust company, as rights agent. The rights agent will act solely as our agent in connection with the certificates relating to the rights of the series of certificates and will not assume any obligation or relationship of agency or trust for or with any holders of rights certificates or beneficial owners of rights. The following description sets forth certain general terms and provisions of the rights to which any prospectus supplement may relate. The particular terms of the rights to which any prospectus supplement may relate and the extent, if any, to which the general provisions may apply to the rights so offered will be described in the applicable prospectus supplement. To the extent that any particular terms of the rights, rights agreement or rights certificates described in a prospectus supplement differ from any of the terms described below, then the terms described below will be deemed to have been superseded by that prospectus supplement. We encourage you to read the applicable rights agreement and rights certificate for additional information before you decide whether to purchase any of our rights.

We will provide in a prospectus supplement the following terms of the rights being issued:

- the date of determining the stockholders entitled to the rights distribution;
- the aggregate number of shares of common stock or other securities purchasable upon exercise of the rights;
- the exercise price;
- the aggregate number of rights issued;
- whether the rights are transferrable and the date, if any, on and after which the rights may be separately transferred;

- the date on which the right to exercise the rights will commence, and the date on which the right to exercise the rights will expire;
- the method by which holders of rights will be entitled to exercise;
- the conditions to the completion of the offering, if any;
- the withdrawal, termination and cancellation rights, if any;
- whether there are any backstop or standby purchaser or purchasers and the terms of their commitment, if any;
- whether stockholders are entitled to oversubscription rights, if any;
- any applicable U.S. federal income tax considerations; and
- any other terms of the rights, including terms, procedures and limitations relating to the distribution, exchange and exercise of the rights, as applicable.

Each right will entitle the holder of rights to purchase for cash the principal amount of shares of common stock or other securities at the exercise price provided in the applicable prospectus supplement. Rights may be exercised at any time up to the close of business on the expiration date for the rights provided in the applicable prospectus supplement.

Holders may exercise rights as described in the applicable prospectus supplement. Upon receipt of payment and the rights certificate properly completed and duly executed at the corporate trust office of the rights agent or any other office indicated in the prospectus supplement, we will, as soon as practicable, forward the shares of common stock or other securities, as applicable, purchasable upon exercise of the rights. If less than all of the rights issued in any rights offering are exercised, we may offer any unsubscribed securities directly to persons other than stockholders, to or through agents, underwriters or dealers or through a combination of such methods, including pursuant to standby arrangements, as described in the applicable prospectus supplement.

Rights Agent

The rights agent for any rights we offer will be set forth in the applicable prospectus supplement.

DESCRIPTION OF UNITS

The following description, together with the additional information that we include in any applicable prospectus supplements summarizes the material terms and provisions of the units that we may offer under this prospectus. While the terms we have summarized below will apply generally to any units that we may offer under this prospectus, we will describe the particular terms of any series of units in more detail in the applicable prospectus supplement. The terms of any units offered under a prospectus supplement may differ from the terms described below.

We will incorporate by reference from reports that we file with the SEC, the form of unit agreement that describes the terms of the series of units we are offering, and any supplemental agreements, before the issuance of the related series of units. The following summaries of material terms and provisions of the units are subject to, and qualified in their entirety by reference to, all the provisions of the unit agreement and any supplemental agreements applicable to a particular series of units. We urge you to read the applicable prospectus supplements related to the particular series of units that we may offer under this prospectus, as well as any related free writing prospectuses and the complete unit agreement and any supplemental agreements that contain the terms of the units.

General

We may issue units consisting of common stock, one or more debt securities, warrants or rights for the purchase of common stock and/or debt securities in one or more series, in any combination. Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit. Thus, the holder of a unit will have the rights and obligations of a holder of each security included in the unit. The unit agreement under which a unit is issued may provide that the securities included in the unit may not be held or transferred separately, at any time or at any time before a specified date.

We will describe in the applicable prospectus supplement the terms of the series of units being offered, including:

- the designation and terms of the units and of the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;
- any provisions of the governing unit agreement that differ from those described below; and
- any provisions for the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units.

The provisions described in this section, as well as those set forth in any prospectus supplement or as described under “Description of Capital Stock,” “Description of Debt Securities,” “Description of Warrants” and “Description of Rights” will apply to each unit, as applicable, and to any common stock, debt security, warrant or right included in each unit, as applicable.

Unit Agent

The name and address of the unit agent for any units we offer will be set forth in the applicable prospectus supplement.

Issuance in Series

We may issue units in such amounts and in such numerous distinct series as we determine.

Enforceability of Rights by Holders of Units

Each unit agent will act solely as our agent under the applicable unit agreement and will not assume any obligation or relationship of agency or trust with any holder of any unit. A single bank or trust company may act as unit agent for more than one series of units. A unit agent will have no duty or responsibility in case of any default by us under the applicable unit agreement or unit, including any duty or responsibility to initiate any proceedings at lawor otherwise, or to make any demand upon us. Any holder of a unit may, without the consent of the related unit agent or the holder of any other unit, enforce by appropriate legal action its rights as holder under any security included in the unit.

Provisions of Delaware Law Governing Business Combinations

We are subject to the "business combination" provisions of Section 203 of the DGCL. In general, such provisions prohibit a publicly held Delaware corporation from engaging in any "business combination" transactions with any "interested stockholder" for a period of three years after the date on which the person became an "interested stockholder," unless:

- prior to such date, the board of directors approved either the "business combination" or the transaction which resulted in the "interested stockholder" obtaining such status; or

- upon consummation of the transaction which resulted in the stockholder becoming an "interested stockholder," the "interested stockholder" owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding (but not the outstanding voting stock owned by the "interested stockholder") those shares owned by (a) persons who are directors and also officers and (b) employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or

- at or subsequent to such time the "business combination" is approved by the board of directors and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock which is not owned by the "interested stockholder."

A "business combination" is defined to include mergers, asset sales and other transactions resulting in financial benefit to a stockholder. In general, an "interested stockholder" is a person who, together with affiliates and associates, owns 15% or more of a corporation's voting stock or within three years did own 15% or more of a corporation's voting stock. The statute could prohibit or delay mergers or other takeover or change in control attempts with respect to us and, accordingly, may discourage attempts to acquire us.

Limitations on Liability and Indemnification of Officers and Directors

Section 145 of the DGCL authorizes a court to award, or a corporation's board of directors to grant, indemnity to directors and officers in terms sufficiently broad to permit such indemnification under certain circumstances for liabilities (including reimbursement for expenses incurred) arising under the Securities Act of 1933. Our amended and restated certificate of incorporation limits the liability of our officers and directors to the fullest extent permitted by the DGCL, and our amended and restated certificate of incorporation provides that we will indemnify our officers and directors to the fullest extent permitted by such law.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers or persons controlling the registrant pursuant to the foregoing provisions, the registrant has been informed that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

LEGAL MATTERS

Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., New York, New York, will pass upon the validity of the issuance of the securities to be offered by this prospectus.

EXPERTS

The consolidated financial statements of Bellerophon Therapeutics, Inc. as of December 31, 2019 and 2018, and for each of the years in the three-year period ended December 31, 2019, have been incorporated by reference herein in reliance upon the report of KPMG LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, and file annual, quarterly and current reports, proxy statements and other information with the SEC. SEC filings are available at the SEC's web site at http://www.sec.gov.

This prospectus is only part of a registration statement on Form S-3 that we have filed with the SEC under the Securities Act and therefore omits certain information contained in the registration statement. We have also filed exhibits and schedules with the registration statement that are excluded from this prospectus, and you should refer to the applicable exhibit or schedule for a complete description of any statement referring to any contract or other document.

We also maintain a website at *www.bellerophon.com*, through which you can access our SEC filings, free of charge. The information set forth on, or accessible from, our website is not part of this prospectus.

INCORPORATION OF INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" information that we file with them. Incorporation by reference allows us to disclose important information to you by referring you to those other documents. The information incorporated by reference is an important part of this prospectus, and information that we file later with the SEC will automatically update and supersede this information. This prospectus omits certain information contained in the registration statement, as permitted by the SEC. You should refer to the registration statement and any prospectus supplement filed hereafter, including the exhibits, for further information about us and the securities we may offer pursuant to this prospectus. Statements in this prospectus regarding the provisions of certain documents filed with, or incorporated by reference in, the registration statement are not necessarily complete and each statement is qualified in all respects by that reference. Copies of all or any part of the registration statement, including the documents incorporated by reference or the exhibits, may be obtained upon payment of the prescribed rates at the offices of the SEC listed above in "Where You Can Find More Information." The documents we are incorporating by reference are:

- our Annual Report on Form 10-K for the fiscal year ended December 31, 2019, filed on April 6, 2020;
- our Quarterly Report on Form 10-Q for the period ended March 31, 2020, filed on May 11, 2020;
- our definitive Proxy Statement relating to our 2020 annual meeting of stockholders filed on April 23,2020;
- our Current Reports on Form 8-K filed on January 29, 2020, February 7, 2020, February 18, 2020, March 10, 2020, March 20, 2020, March 30, 2020, March 30, 2020, April 8, 2020, May 11, 2020, May 20, 2020 and June 12, 2020 (except for the information furnished under Items 2.02 or 7.01 and the exhibits furnished thereto);
- the description of our common stock contained in Exhibit 4.5 in our Form 10-K filed on April 6, 2020; and
- all reports and other documents subsequently filed by us pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act after the date of this prospectus and prior to the termination or completion of the offering of securities under this prospectus shall be deemed to be incorporated by reference in this prospectus and to be a part hereof from the date of filing such reports and other documents.

Unless otherwise noted, the SEC file number for each of the documents listed above is 001-36845.

In addition, all reports and other documents filed by us pursuant to the Exchange Act after the date of the initial registration statement and prior to effectiveness of the registration statement shall be deemed to be incorporated by reference into this prospectus.

Any statement contained in this prospectus or in a document incorporated or deemed to be incorporated by reference into this prospectus will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus or any other subsequently filed document that is deemed to be incorporated by reference into this prospectus modifies or supersedes the statement. Any statement so modified or superseded will not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

You may request, orally or in writing, a copy of any or all of the documents incorporated herein by reference. These documents will be provided to you at no cost, by contacting: Investor Relations, Bellerophon Therapeutics, Inc., 184 Liberty Corner Road, Suite 302, or call (908) 574-4770.

You should rely only on information contained in, or incorporated by reference into, this prospectus and any prospectus supplement. We have not authorized anyone to provide you with information different from that contained in this prospectus or incorporated by reference in this prospectus. We are not making offers to sell the securities in any jurisdiction in which such an offer or solicitation is not authorized or in which the person making such offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make such offer or solicitation.

Up to $40,000,000

Common Stock

PROSPECTUS SUPPLEMENT

Jefferies

July 17, 2020