

PROSPECTUS



Pulse Biosciences, Inc.

1,685,032 Shares of Common Stock

The selling stockholders identified in this prospectus or their transferees may sell or otherwise dispose of up to 1,685,032 shares of our common stock, par value \$0.001 per share. We are not offering any shares of common stock under this prospectus and will not receive any proceeds from the sale or other disposition of the shares covered hereby.

The selling stockholders (which term includes their respective donees, pledgees, transferees or other successors-in-interest) may, from time to time, sell, transfer or otherwise dispose of the shares or interests therein on any stock exchange, market or trading facility on which the shares are traded or in private transactions at fixed prices, at market prices prevailing at the time of sale, at prices related to the prevailing market price, at varying prices determined at the time of sale, or at negotiated prices. The selling stockholders will bear all fees, discounts, concessions or commissions of broker-dealers or agents in connection with the offering of the shares by the selling stockholders. See “Plan of Distribution” beginning on page 13 of this prospectus for more information about how the selling stockholders may sell their shares of common stock.

Our common stock is traded on The NASDAQ Capital Market under the symbol “PLSE”. On June 27, 2017, the last reported sale price of our common stock on The NASDAQ Capital Market was \$31.88 per share.

We are an “emerging growth company” as defined under the federal securities laws and are subject to reduced public company reporting requirements. Investing in our common stock involves a high degree of risk. You should carefully read and consider the risk factors described in, and incorporated by reference under, “Risk Factors” beginning on page 5 of this prospectus and in the applicable prospectus supplement before investing in any securities.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is July 11, 2017.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the United States Securities and Exchange Commission (the “SEC”). Under this registration statement, the selling stockholders may sell, at any time and from time to time, in one or more offerings, up to 1,685,032 shares of common stock. When the selling stockholders elect to make an offer of any common stock described in this prospectus, pursuant to this registration statement, a prospectus supplement, if required, may be distributed that will contain specific information about the terms of that offering. Any required prospectus supplement may also add, update or change information contained in this prospectus.

You should only rely on the information contained or incorporated by reference in this prospectus and any prospectus supplement. No person has been authorized to give any information or make any representations other than those contained or incorporated by reference in this prospectus or any accompanying prospectus supplement in connection with the offering described herein and therein, and, if given or made, such information or representations must not be relied upon as having been authorized by us or the selling stockholders.

You should read the entire prospectus and any prospectus supplement, as well as the documents incorporated by reference into this prospectus or any prospectus supplement, before making an investment decision. Neither the delivery of this prospectus or any prospectus supplement nor any sale made hereunder shall under any circumstances imply that the information contained or incorporated by reference herein or in any prospectus supplement is correct as of any date subsequent to the date hereof or of such prospectus supplement, as applicable. You should assume that the information appearing in this prospectus, any prospectus supplement or any document incorporated by reference is accurate only as of the date of the applicable documents, regardless of the time of delivery of this prospectus or any sale of securities. Our business, financial condition, results of operations and prospects may have changed since that date.

This prospectus may be supplemented from time to time by one or more prospectus supplements. Any such prospectus supplements may include additional or different information, such as additional or different risk factors or other special considerations applicable to us or our business, financial condition or results of operations. If there is any inconsistency between the information in this prospectus and any prospectus supplement, you should rely on the information contained in the prospectus supplement.

This prospectus is neither an offer to sell nor a solicitation of an offer to buy any securities other than those registered by this prospectus, nor it is an offer to sell or a solicitation of an offer to buy securities where an offer or solicitation would be unlawful.

Unless the context requires otherwise, references in this prospectus to “Pulse,” “the Company,” “we,” “us” and “our” refer to Pulse Biosciences, Inc., a Nevada corporation, and our consolidated subsidiaries. This prospectus, including the documents incorporated herein by reference, contains references to a number of trademarks that are our registered trademarks or those of our affiliates, or trademarks for which we or our affiliates have pending registration applications or common law rights. This prospectus may also include trade names, trademarks and service marks of other companies and organizations.

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, each prospectus supplement and the information incorporated by reference in this prospectus and each prospectus supplement contain certain statements that constitute “forward-looking statements” within the meaning of Section 27A of the Securities Act, as amended (the “Securities Act”) and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). The words “believe,” “may,” “will,” “potentially,” “estimate,” “continue,” “anticipate,” “intend,” “could,” “would,” “project,” “plan,” “expect” and the negative and plural forms of these words and similar expressions are intended to identify forward-looking statements, but are not the exclusive means of identifying such statements. Those statements appear in this prospectus, any accompanying prospectus supplement and the documents incorporated herein and therein by reference, particularly in the sections titled “Prospectus Summary” and “Risk Factors,” and include statements regarding the intent, belief or current expectations of the Company and management that are subject to known and unknown risks, uncertainties and assumptions.

This prospectus, any prospectus supplement and the information incorporated by reference in this prospectus and any prospectus supplement also contain statements that are based on the current expectations of our Company and management. You are cautioned that any such forward-looking statements are not guarantees of future performance and involve risks and uncertainties, and that actual results may differ materially from those projected in the forward-looking statements as a result of various factors.

Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified, you should not rely upon forward-looking statements as predictions of future events. The events and circumstances reflected in the forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Except as required by applicable law, including the securities laws of the United States and the rules and regulations of the SEC, we do not plan to publicly update or revise any forward-looking statements contained herein after we distribute this prospectus, whether as a result of any new information, future events or otherwise.

PROSPECTUS SUMMARY

This summary description about us and our business highlights selected information contained elsewhere in this prospectus or incorporated in this prospectus by reference. This summary does not contain all of the information you should consider before investing in our common stock. You should carefully read this entire prospectus and any applicable prospectus supplement, including each of the documents incorporated herein or therein by reference, before making an investment decision.

Overview

We are a clinical-stage medical technology company developing a non-thermal tissue treatment platform technology based upon our proprietary Nano-Pulse Stimulation (“NPS”) technology and pursuing applications in oncology, dermatology, general tissue treatment and veterinary medicine. NPS is a novel patented technology which leverages nano-second duration energy pulses that have demonstrated effective local tumor control and the initiation of an adaptive immune response in pre-clinical studies. We are pursuing a number of clinical applications for NPS, including oncology, dermatology, aesthetics and other minimally invasive applications where we believe NPS has the potential to compare favorably with current therapies and treatments. We are currently conducting research and development activities in pursuit of commercial applications for our NPS technology, but we have not yet commercialized or recognized revenue from our technology.

We plan to establish ourselves as a medical technology company with a local, non-thermal, and drug-free treatment platform that initiates cell death in targeted tissue by a process of cell signaling and also induces a systemic adaptive immune response to the targeted tissue. In order to accomplish this, we plan to:

- Improve our technology by continuing our research and product development efforts. We expect to develop different devices to target different tissue types that will leverage the novel characteristics of our technology platform.
- Further explore and understand the benefits of NPS with the objectives of broadening the currently planned cosmetic and therapeutic applications and identifying new applications. We anticipate that results of our clinical studies will enable us to recognize certain unmet medical needs that may be addressed by our technology.
- Continue to protect and expand our intellectual property portfolio with respect to NPS technology, which we expect will increase our ability to deter competitors and position our company for favorable licensing and partnering opportunities.
- Partner with medical or biomedical device companies for certain applications which we anticipate may accelerate product development and acceptance into target market areas and allow us to gain the sales and marketing advantages of the distribution infrastructure.

Corporate Information

Pulse Biosciences, Inc., formerly Electroplate, Inc. was incorporated in the State of Nevada on May 19, 2014. Our corporate offices are located at 3957 Point Eden Way, Hayward, California 94545, and our telephone number is (510) 906-4600. We maintain a website at www.pulsebiosciences.com where general information about us is available. Our website, and the information contained therein, is not a part of this prospectus.

We are an “emerging growth company” as defined in the Jumpstart Our Business Startups Act of 2012 (the “JOBS Act”). We will remain an emerging growth company until the earliest to occur of (1) the last

day of the fiscal year in which we have \$1.0 billion or more in annual revenue; (2) the date we qualify as a “large accelerated filer,” with at least \$700 million of equity securities held by non-affiliates; (3) the date on which we have issued, in any three-year period, more than \$1.0 billion in non-convertible debt securities; or (4) the last day of the fiscal year ending after the fifth anniversary of our initial public offering.

The Offering

The selling stockholders named in this prospectus may offer and sell up to 1,685,032 shares of our common stock, par value \$0.001 per share. Our common stock is currently listed on The NASDAQ Capital Market under the symbol “PLSE.” Shares of our common stock that may be offered under this prospectus will be fully paid and non-assessable. We will not receive any of the proceeds of sales by the selling stockholders of any of the common stock covered by this prospectus. Throughout this prospectus, when we refer to the shares of our common stock being registered on behalf of the selling stockholders for offer and sale, we are referring to the shares that are being registered pursuant to the terms of the (1) Registration Rights Agreement, dated as of November 6, 2014, by and among the Company and the persons listed on Schedule A thereto, which persons are holders of certain warrants to purchase shares of Common Stock (the “**Warrantholders’ Rights Agreement**”), (2) Underwriter Warrants issued to certain persons pursuant to that certain Underwriting Agreement, dated May 17, 2016, between the Company and MDB Capital Group, LLC (“**MDB**”), as representative of the underwriters (the “**Underwriter Warrants**”), and (3) Purchase Agreement, dated February 7, 2017, by and among the Company and the other parties thereto (the “**Purchase Agreement**”; together with the Warrantholders’ Rights Agreement and the Underwriter Warrants, the “**Registration Rights Agreements**”). When we refer to the selling stockholders in this prospectus, we are referring to the holders of registration rights under the Registration Rights Agreements and, as applicable, their permitted transferees or other successors-in-interest that may be identified in a supplement to this prospectus or, if required, a post-effective amendment to the registration statement of which this prospectus is a part. See “Selling Stockholders” beginning on page 11 of this prospectus.

RISK FACTORS

Investing in our common stock involves risks. Before deciding to invest in our common stock, please read carefully the risks and uncertainties described below and incorporated by reference in this prospectus or any prospectus supplement. These risks and uncertainties include those discussed in our Annual Report on Form 10-K for the fiscal year ended December 31, 2016 and any updates described in our most recent Quarterly Report on Form 10-Q, all of which are incorporated by reference and may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future and any prospectus supplement related to a particular offering. See “Information Incorporation by Reference” and “Where You Can Find More Information.” These risks are not the only risks that we may face. Additional risks and uncertainties that we are unaware of, or that we currently deem immaterial, may also become important factors that affect us. If any of the risks or uncertainties described in this prospectus or our SEC filings or any such additional risks and uncertainties actually occur, our business, financial condition or results of operations could be materially and adversely affected which could cause our actual operating results to differ materially from those indicated or suggested by forward-looking statements made in this prospectus or our SEC filings or presented elsewhere by management from time to time. In that case, the trading price of our common stock could decline and you could lose all or part of your investment. Please also see “Cautionary Statement Regarding Forward-Looking Statements” beginning on page 2.

The number of shares being registered for sale is significant in relation to the number of our outstanding shares of common stock.

We have filed a registration statement of which this prospectus is a part to register the shares offered hereunder for sale into the public market by the selling stockholders. These shares represent a large number of shares of our common stock, and if sold in the market all at once or at about the same time, could depress the market price of our common stock during the period the registration statement remains effective and could also affect our ability to raise equity capital.

USE OF PROCEEDS

We are registering these shares pursuant to registration rights granted to the selling stockholders. We are not selling any securities under this prospectus and we will not receive any of the proceeds from the sale or other disposition by the selling stockholders or their transferees of the shares of common stock covered hereby.

We have agreed to pay all costs, expenses and fees relating to registering the shares of our common stock referenced in this prospectus. The selling stockholders will pay any brokerage commissions and/or similar charges incurred in connection with the sale or other disposition by them of the shares covered hereby.

See “Selling Stockholders” and “Plan of Distribution” described below.

DESCRIPTION OF CAPITAL STOCK

The following information describes our common stock and preferred stock, as well as certain provisions of our articles of incorporation and bylaws. This description is only a summary. You should also refer to our articles of incorporation and bylaws, which have been filed with the SEC as exhibits to our registration statement, of which this prospectus forms a part.

General

Our authorized capital stock consists of 45,000,000 shares of common stock with a \$0.001 par value per share, and 5,000,000 shares of undesignated preferred stock with a \$0.001 par value per share. Our board of directors may establish the rights and preferences of the preferred stock from time to time. As of June 27, 2017, there were 14,314,585 shares of common stock issued and outstanding.

The following is a summary of the material provisions of the common stock and preferred stock provided for in our articles of incorporation and bylaws. For additional detail about our capital stock, please refer to our articles of incorporation and bylaws.

Common Stock

We are authorized to issue 45,000,000 shares of \$0.001 par value of common stock. There are no agreements or outstanding options, warrants or similar rights that entitle their holder to acquire from us any of our equity securities.

Holders of shares of common stock are entitled to one vote per share on all matters to be voted upon by the stockholders generally. Stockholders are entitled to receive such dividends as may be declared from time to time by the board of directors out of funds legally available therefore, and in the event of liquidation, dissolution or winding up of the company to share ratably in all assets remaining after payment of liabilities. The holders of shares of common stock have conversion or cumulative voting rights.

Our common stock is listed on The NASDAQ Capital Market under the symbol "PLSE." The transfer agent and registrar for the common stock is Corporate Stock Transfer, Inc. Its address is 3200 Cherry Creek Drive South, #430, Denver, CO 80209, and its telephone number is 303-282-4800.

Preferred Stock

The following description of preferred stock and the description of the terms of any particular series of preferred stock that we choose to issue hereunder and that will be set forth in the related prospectus supplement are not complete. These descriptions are qualified in their entirety by reference to our articles of incorporation and the certificate of designation relating to any series of preferred stock. The rights, preferences, privileges and restrictions of the preferred stock of each series will be fixed by the certificate of designation relating to that series. The prospectus supplement also will contain a description of certain United States federal income tax consequences relating to the purchase and ownership of the series of preferred stock that is described in the prospectus supplement.

Under the terms of our articles 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 may designate the powers, designations, preferences, and relative participation, optional or other rights, if any, and the qualifications, limitations or restrictions thereof, including dividend rights, conversion rights, voting rights, redemption rights, liquidation preference, sinking fund terms and the number of shares

constituting any series or the designation or any series. There are no restrictions presently on the repurchase or redemption of any shares of our preferred stock.

The prospectus supplement for a series of preferred stock will specify:

- the maximum number of shares;
- the designation of the shares;
- the annual dividend rate, if any, whether the dividend rate is fixed or variable, the date or dates on which dividends will accrue, the dividend payment dates, and whether dividends will be cumulative;
- the price and the terms and conditions for redemption, if any, including redemption at our option or at the option of the holders, including the time period for redemption, and any accumulated dividends or premiums;
- the liquidation preference, if any, and any accumulated dividends upon the liquidation, dissolution or winding up of our affairs;
- any sinking fund or similar provision, and, if so, the terms and provisions relating to the purpose and operation of the fund;
- the terms and conditions, if any, for conversion or exchange of shares of any other class or classes of our capital stock or any series of any other class or classes, or of any other series of the same class, or any other securities or assets, including the price or the rate of conversion or exchange and the method, if any, of adjustment;
- the voting rights; and
- any or all other preferences and relative, participating, optional or other special rights, privileges or qualifications, limitations or restrictions.

The issuance of shares of preferred stock will affect, and may adversely affect, the rights of holders of common stock. It is not possible to state the actual effect of the issuance of any shares of preferred stock on the rights of holders of common stock until our board of directors determines the specific rights attached to that preferred stock. The effects of issuing additional preferred stock could include one or more of the following:

- restricting dividends on the common stock;
- diluting the voting power of the common stock;
- impairing the liquidation rights of the common stock; or
- delaying or preventing changes in control or management of our company.

Preferred stock will be fully paid and nonassessable upon issuance.

Anti-Takeover Effects of Certain Provisions of Nevada Law and Our Charter Documents

The following is a summary of certain provisions of Nevada law, our articles of incorporation and our bylaws. This summary does not purport to be complete and is qualified in its entirety by reference to the Nevada Revised Statutes and our articles of incorporation and bylaws.

Effect of Nevada Control Share Statute. We are subject to Sections 78.378 to 78.3793 of the Nevada Revised Statutes, which are referred to as the Control Share Statute that is a type of anti-takeover law. In general, these provisions restrict the ability of individuals and groups from acquiring one-fifth or more of the voting shares of a Nevada corporation that has 200 or more stockholders of record, at least 100 of whom have addresses in Nevada, from exercising the voting rights of the acquired shares, absent required stockholder approval of the share acquisition transaction or an opt out election by the corporation. The prohibition on the voting of the acquired shares is limited to three years after acquisition.

To avoid the voting restriction, the acquisition of a controlling interest must be approved by both (a) the holders of a majority of the voting power of the corporation, and (b) if the acquisition would adversely alter or change any preference or any relative or other right given to any other class or series of outstanding shares, the holders of the majority of each class or series affected, excluding those shares as to which any interested stockholder exercises voting rights, and the approval must specifically include the conferral of such voting rights. Although we have not opted out of this statute, a corporation alternatively may expressly elect not to be governed by the provisions in either its articles of incorporation or its bylaws. Additionally, in the face of potential control share transaction, a corporation, if it has not opted out of the statutory provisions, may opt out of the control share statute by amending its articles of incorporation or its bylaws prior to the 10th day following the acquisition of a controlling interest by an acquiring person.

Effect of Nevada Business Combination Statute. We are subject to Sections 78.411 to 78.444 of the Nevada Revised Statutes, which are referred to as the Business Combination Statute. This statute is designed to limit acquirers of voting stock of a corporation from effecting a business combination without the consent of the stockholders or board of directors. The statute provides that specified persons who, together with their affiliates and associates, own, or within two years did own, 10% or more of the outstanding voting stock of a Nevada corporation with at least 200 stockholders of record cannot engage in specified business combinations with a Nevada corporation for a period of two years after the date on which the person became an interested stockholder, unless (a) the business combination or the transaction by which the person first became an interested stockholder was approved by the Nevada corporation's board of directors before the person first became an interested stockholder, or (b) the combination is approved by the board and, at or after that time, the combination is approved at an annual or special meeting of the stockholders by the affirmative vote of 60% or more of the voting power of the disinterested stockholders.

Effect of California Corporation Long-Arm Statute. We are a Nevada corporation, governed by the Nevada Revised Statutes – Nevada Corporations Law; however, our headquarters, property and officers are located in California. Section 2115 of the California Corporations Code (the “California Corporation Long-Arm Statute”) purports to impose on corporations like us certain portions of California's laws governing corporations formed under the laws of the State of California. While disputes have arisen regarding the enforceability of the California Corporation Long-Arm Statute, the statute purports to apply the California Corporations Code in the following areas of governance to corporations that meet the test for applicability for the California Corporation Long-Arm Statute: Chapter 1 (general provisions and definitions), to the extent applicable to the following provisions; Section 301 (annual election of directors); Section 303 (removal of directors without cause); Section 304 (removal of directors by court proceedings); Section 305, subdivision (c) (filling of director vacancies where less than a majority in office elected by stockholders); Section 309 (directors' standard of care); Section 316 (excluding paragraph (3) of subdivision (a) and paragraph (3) of subdivision (f)) (liability of directors for unlawful distributions); Section 317 (indemnification of directors, officers, and others); Sections 500 to 505, inclusive (limitations on corporate distributions in cash or property); Section 506 (liability of stockholder who receives unlawful distribution); Section 600, subdivisions (b) and (c) (requirement for annual stockholders' meeting and remedy if same not timely held); Section 708, subdivisions (a), (b), and (c) (stockholder's right to cumulate votes at any election of directors); Section 710 (supermajority vote requirement); Section 1001, subdivision (d) (limitations on sale of assets); Section 1101 (provisions following subdivision (e)) (limitations on mergers); Section 1151 (first sentence only) (limitations on conversions); Section 1152 (requirements of conversions); Chapter 12 (commencing with Section 1200) (reorganizations); Chapter 13 (commencing with Section 1300) (dissenters' rights); Sections 1500 and 1501 (records and reports); Section 1508 (action by Attorney General); Chapter 16 (commencing with Section 1600) (rights of inspection).

We believe it is likely that we meet the test for the application of the California Corporation Long-Arm Statute and do not anticipate a specific time in the future when we would not meet such test. The California Corporation Long-Arm Statute, if applicable, would purport to require a different outcome for certain important activities fundamental to the governance of corporations, and you are encouraged to review the effect of the California Long-Arm Statute to determine whether the differences from the Nevada Revised Statutes – Nevada Corporations Law are important to you.

Our Charter Documents. Our charter documents include provisions that may have the effect of discouraging, delaying or preventing a change in control or an unsolicited acquisition proposal that a stockholder might consider favorable, including a proposal that might result in the payment of a premium over the market price for the shares held by our stockholders. Certain of these provisions are summarized in the following paragraphs.

Effects of authorized but unissued common stock and preferred stock. One of the effects of the existence of authorized but unissued common stock and undesignated preferred stock may be to enable our board of directors to make more difficult or to discourage an attempt to obtain control of our company by means of a merger, tender offer, proxy contest or otherwise, and thereby to protect the continuity of management. If, in the due exercise of its fiduciary obligations, the board of directors were to determine that a takeover proposal was not in our best interest, such shares could be issued by the board of directors without stockholder approval in one or more transactions that might prevent or render more difficult or costly the completion of the takeover transaction by diluting the voting or other rights of the proposed acquirer or insurgent stockholder group, by putting a substantial voting bloc in institutional or other hands that might undertake to support the position of the incumbent board of directors, by effecting an acquisition that might complicate or preclude the takeover, or otherwise.

Cumulative Voting. Our articles of incorporation does not provide for cumulative voting in the election of directors, which would allow holders of less than a majority of the stock to elect some directors.

Vacancies. Our bylaws provide that all vacancies may be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum.

SELLING STOCKHOLDERS

Pursuant to the Registration Rights Agreements, we agreed to file the registration statement of which this prospectus forms a part to cover the resale of the shares issued to the selling stockholders or issuable upon exercise of warrants, including certain other shares identified in the Registration Rights Agreements, and to keep such registration statement effective for the periods set forth in each Registration Rights Agreement as follows:

Warranholders' Rights Agreement. In connection with a private placement offering of shares of common stock and an Investment Banking Agreement dated September 30, 2014, we entered into a Registration Rights Agreement for Warrants, dated November 6, 2014, with MDB pursuant to which we agreed, upon request, to file a registration statement of which this prospectus forms a part to cover the resale of up to 299,625 shares of common stock issuable upon exercise of warrants, and to keep such registration statement effective for twelve (12) months starting from the date of effectiveness of this Registration Statement.

Underwriters' Warrants. In connection with the Underwriting Agreement, dated May 17, 2016, between the Company and MDB, as representative of the underwriters, we issued warrants to purchase up to 575,000 shares of our common stock. Pursuant to such warrants, we agreed, upon request, to file a registration statement of which this prospectus forms a part to cover the resale of shares issuable upon exercise of such warrants, and to keep such registration statement effective until the date on which all of the shares registered for sale or resale under this Registration Statement are either sold pursuant to the Registration Statement or can be sold publicly without restriction or limitation under Rule 144 under the Securities Act.

Purchase Agreement. On February 7, 2017, we entered into a Purchase Agreement with certain of the selling stockholders pursuant to which we issued and sold in a private placement a total of 819,673 shares of common stock, for a total purchase price of approximately \$5.0 million. Pursuant to this Purchase Agreement, we agreed to file a registration statement of which this prospectus forms a part to cover the resale of the shares issued to the selling stockholders, and to keep such registration statement effective until the date on which all of the shares registered for sale or resale under this Registration Statement are either sold pursuant to the Registration Statement or can be sold publicly without restriction or limitation under Rule 144 under the Securities Act.

Registration of Shares under Registration Rights Agreements

We are registering the shares in accordance with the terms of the corresponding Registration Rights Agreements to permit each of the selling stockholders identified below, or their permitted transferees or other successors-in-interest that may be identified in a supplement to this prospectus or, if required, a post-effective amendment to the registration statement of which this prospectus is a part, to sell, resell or otherwise dispose of the shares in a manner contemplated under "Plan of Distribution" in this prospectus (as may be supplemented and amended). Throughout this prospectus, when we refer to the selling stockholders in this prospectus we are referring to the holders of registration rights under the Registration Rights Agreements and, as applicable, their permitted transferees or other successors-in-interest that may be identified in a supplement to this prospectus or, if required, a post-effective amendment to the registration statement of which this prospectus is a part.

The selling stockholders may sell some, all or none of their shares. We do not know how long the selling stockholders will hold the shares before selling them, and we currently have no agreements, arrangements or understandings with the selling stockholders regarding the sale or other disposition of

any of the shares. The shares covered hereby may be offered from time to time by the selling stockholders.

The following table sets forth the name of each selling stockholder, the number and percentage of our common stock beneficially owned by the selling stockholders as of June 27, 2017, the number of shares that may be offered under this prospectus, and the number and percentage of our common stock beneficially owned by the selling stockholders assuming all of the shares covered hereby are sold. Beneficial ownership is determined in accordance with the rules of the SEC and includes voting or investment power with respect to our common stock.

All information contained in the table below and the footnotes thereto is based upon information provided to us by the selling stockholders under this prospectus. The percentage of our shares owned after the offering is based on 14,314,585 shares of common stock outstanding as of June 27, 2017. Unless otherwise indicated in the footnotes to this table, we believe that each of the selling stockholders named in this table has sole voting power with respect to the shares of common stock indicated as beneficially owned.

Unless otherwise noted below, the address of each stockholder listed on the table is c/o Pulse Biosciences, Inc., 3957 Point Eden Way, Hayward, CA 94545.

Name of Selling Stockholder(1)	Beneficial Ownership Prior to the Offering		Number of Shares Being Registered Hereby(4)	Shares Beneficially Owned After Offering	
	Number of Shares Beneficially Owned Prior to the Offered(2)	Percentage of Outstanding Common Stock(3)		Number of Shares Beneficially Owned After the Offering(2)	Percentage of Outstanding Common Stock(3)
Robert W. Duggan (5)	3,145,244	22.0%	1,510,410	1,634,834	11.4%
Mahkam Zanganeh (6)	374,409	2.6%	163,935	210,474	1.5%
Rodney Baber (7)	10,087	*	10,087	*	*
Jeanne Cantlay (8)	600	*	600	*	*
Total	3,530,340	24.7%	1,685,032	1,845,308	12.9%

* Less than 1%

- (1) Information concerning named selling stockholders or future transferees, pledgees, assignees, distributees, donees or successors of or from any such stockholder or others who later hold any selling stockholder's interests will be set forth in supplements to this prospectus, absent circumstances indicating that the change is material. In addition, post-effective amendments to the registration statement of which this prospectus forms a part will be filed to disclose any material changes to the plan of distribution from the description in the final prospectus.
- (2) Beneficial ownership is determined in accordance with the rules and regulations of the SEC. In computing the number of shares beneficially owned by a person and the percentage ownership of that person, securities that are currently convertible or exercisable into shares of our common stock, or convertible or exercisable into shares of our common stock within 60 days of the date hereof are deemed outstanding. Such shares, however, are not deemed outstanding for the purposes of computing the percentage ownership of any other person.
- (3) Based on 14,314,585 shares of common stock outstanding as of June 27, 2017.
- (4) Assumes the sale of all shares being offered pursuant to this prospectus.
- (5) Based on information obtained from Mr. Duggan. Consists of (i) 3,110,244 shares held in Mr. Duggan's name, and (ii) 35,000 shares held by Genius Accelerated LLC, of which Mr. Duggan is the sole member and beneficiary.
- (6) Based on information obtained from Ms. Zanganeh. Includes (i) 10,000 shares subject to options exercisable within 60 days of June 30, 2017, and (ii) 85,474 shares held by a dependent minor. Ms. Zanganeh is a director of the Company.
- (7) Based on information obtained from Mr. Baber. Consists of (i) 10,087 shares of common stock underlying a warrant issued on April 26, 2017.
- (8) Based on information obtained from Ms. Cantlay. Consists of 600 shares of common stock underlying a warrant issued on November 6, 2014.

PLAN OF DISTRIBUTION

We are registering the shares of common stock issued to the selling stockholders to permit the sale and resale of these shares of common stock by the selling stockholders from time to time from after the date of this prospectus.

Each selling stockholder may, from time to time, sell any or all of their shares of common stock covered hereby on The NASDAQ Capital Market or any other stock exchange, market or trading facility on which the shares are traded or in private transactions. These sales may be at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or privately negotiated prices. A selling stockholder may use any one or more of the following methods when selling shares:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- settlement of short sales, to the extent permitted by law;
- in transactions through broker-dealers that agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- a combination of any such methods of sale; or
- any other method permitted pursuant to applicable law.

The selling stockholders may also sell the shares of common stock under Rule 144 under the Securities Act, if available, rather than under this prospectus.

Broker-dealers engaged by the selling stockholders may arrange for other brokers-dealers to participate in sales. Broker-dealers may receive commissions or discounts from the selling stockholders (or, if any broker-dealer acts as agent for the purchaser of shares, from the purchaser) in amounts to be negotiated, but, except as set forth in a supplement to this prospectus, in the case of an agency transaction not in excess of a customary brokerage commission in compliance with FINRA Rule 2440; and in the case of a principal transaction a markup or markdown in compliance with FINRA IM-2440-1.

The aggregate proceeds to the selling stockholders from the sale of the common stock offered by them will be the purchase price of the common stock less discounts or commissions, if any. Each of the selling stockholders reserves the right to accept and, together with their agents from time to time, to reject, in whole or in part, any proposed purchase of common stock to be made directly or through

agents. We will not receive any of the proceeds from the sale by the selling stockholders of the shares of common stock.

In connection with the sale of the shares of common stock or interests therein, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the shares of common stock in the course of hedging the positions they assume. The selling stockholders may also sell the shares of common stock short and deliver these securities to close out their short positions or to return borrowed shares in connection with such short sales, or loan or pledge the shares of common stock to broker-dealers that in turn may sell these securities. The selling stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or create one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares of common stock offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

The selling stockholders and any broker-dealers or agents that are involved in selling the shares of common stock may be deemed to be “underwriters” within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such selling stockholders, broker-dealers or agents and any profit on the resale of the shares purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. Selling stockholders who are “underwriters” within the meaning of Section 2(11) of the Securities Act will be subject to the prospectus delivery requirements of the Securities Act and may be subject to certain statutory liabilities of, including but not limited to, Sections 11, 12 and 17 of the Securities Act and Rule 10b-5 under the Exchange Act. Each selling stockholder has informed us that it is not a registered broker-dealer or an affiliate of a registered broker-dealer. In no event shall any broker-dealer receive fees, commissions and markups which, in the aggregate, would exceed eight percent (8%).

We are required to pay certain fees and expenses incurred by us incident to the registration of the shares. We have agreed to indemnify the selling stockholders against certain losses, claims, damages and liabilities, including liabilities under the Securities Act, and the selling stockholders may be entitled to contribution. We may be indemnified by the selling stockholders against certain losses, claims, damages and liabilities, including liabilities under the Securities Act that may arise from any written information furnished to us by the selling stockholders specifically for use in this prospectus, or we may be entitled to contribution.

The selling stockholders will be subject to the prospectus delivery requirements of the Securities Act including Rule 172 thereunder unless an exemption therefrom is available.

We agreed to cause the registration statement of which this prospectus is a part to remain effective for the period set forth in each Registration Rights Agreement. Shares of common stock will be sold only through registered or licensed brokers or dealers if required under applicable state securities laws. In addition, in certain states, the shares of common stock covered hereby may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and complied with.

Under applicable rules and regulations under the Exchange Act, any person engaged in the distribution of the shares of common stock may not simultaneously engage in market making activities with respect to the shares of common stock for the applicable restricted period, as defined in Regulation M, prior to the commencement of the distribution. In addition, the selling stockholders will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including Regulation M, which may limit the timing of purchases and sales of shares of common stock by the selling

stockholders or any other person. We will make copies of this prospectus available to the selling stockholders and have informed them of the need to deliver a copy of this prospectus at or prior to the time of the sale (including by compliance with Rule 172 under the Securities Act).

To the extent required, the shares of our common stock to be sold, the names of the selling stockholders, the respective purchase prices and public offering prices, the names of any agents, dealer or underwriter, any applicable commissions or discounts with respect to a particular offer will be set forth in an accompanying prospectus supplement or, if appropriate, a post-effective amendment to the registration statement that includes this prospectus.

There can be no assurance that any selling stockholder will sell any or all of the shares of common stock we registered on behalf of the selling stockholders pursuant to the registration statement of which this prospectus forms a part.

Once sold under the registration statement of which this prospectus forms a part, the shares of common stock will be freely tradable in the hands of persons other than our affiliates.

LEGAL MATTERS

The validity of the common stock offered by this prospectus will be passed upon by Fennemore Craig, P.C., Reno, Nevada.

EXPERTS

Gumbiner Savett Inc., independent registered public accounting firm, has audited our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2016, as set forth in their report, which is incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements are incorporated by reference in reliance on Gumbiner Savett Inc.'s reports, given on their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and other 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>. You may also read and copy any document we file at the SEC's Public Reference Room at 100 F Street, NE, Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the Public Reference Room. Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, and Current Reports on Form 8-K, including any amendments to those reports, and other information that we file with or furnish to the SEC pursuant to Section 13(a) or 15(d) of the Exchange Act can also be accessed free of charge through the Internet. These filings will be available as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC.

We have filed with the SEC a registration statement under the Securities Act relating to the offering of these securities. The registration statement, including the attached exhibits, contains additional relevant information about us and the securities. This prospectus does not contain all of the information set forth in the registration statement. You can obtain a copy of the registration statement, at prescribed rates, from the SEC at the address listed above. The registration statement and the documents referred to below under "Information Incorporated by Reference" are also available on our website, www.pulsebiosciences.com. We have not incorporated by reference into this prospectus the information on our website, and you should not consider it to be a part of this prospectus.

INFORMATION INCORPORATED BY REFERENCE

The SEC allows us to incorporate by reference into this prospectus certain information we file with it, which means that we can disclose important information by referring you to those documents. The information incorporated by reference is considered to be a part of this prospectus, and information that we file later with the SEC will automatically update and supersede information contained in this prospectus and any accompanying prospectus supplement. We incorporate by reference the documents listed below that we have previously filed with the SEC (excluding any portions of any Form 8-K that are not deemed “filed” pursuant to the General Instructions of Form 8-K):

- our Annual Report on Form 10-K for the fiscal year ended December 31, 2016, filed on March 20, 2017, including the information specifically incorporated by reference into the Annual Report on Form 10-K from our definitive proxy statement on Schedule 14A, filed on April 18, 2017;
- our Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2017, filed on May 10, 2017;
- our Current Reports on Form 8-K filed with the SEC on January 27, 2017, February 10, 2017, February 21, 2017, April 19, 2017, and May 19, 2017; and
- the description of our common stock contained in the Registration Statement on Form 8-A relating thereto, including any amendment or report filed for the purpose of updating such description.

We also incorporate by reference into this prospectus additional documents that we may file with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the completion or termination of the offering, including all such documents we may file with the SEC after the date of the initial registration statement and prior to the effectiveness of the registration statement, but excluding any information deemed furnished and not filed with the SEC. Any statements contained in a previously filed document incorporated by reference into this prospectus is deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus, or in a subsequently filed document also incorporated by reference herein, modifies or supersedes that statement.

This prospectus may contain information that updates, modifies or is contrary to information in one or more of the documents incorporated by reference in this prospectus. You should rely only on the information incorporated by reference or provided in this prospectus. We have not authorized anyone else to provide you with different information. You should not assume that the information in this prospectus is accurate as of any date other than the date of this prospectus or the date of the documents incorporated by reference in this prospectus.

We will provide to each person, including any beneficial owner, to whom this prospectus is delivered, upon written or oral request, at no cost to the requester, a copy of any and all of the information that is incorporated by reference in this prospectus.

Requests for such documents should be directed to:

Pulse Biosciences, Inc.
3957 Point Eden Way,
Hayward, California 94545

You may also access certain of the documents incorporated by reference in this prospectus through our website at www.pulsebiosciences.com. Except for the specific incorporated documents listed above, no information available on or through our website shall be deemed to be incorporated in this prospectus or the registration statement of which it forms a part.



