

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

FORM S-3

REGISTRATION STATEMENT

Under

The Securities Act of 1933

Pulse Biosciences, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

46-5696597
(I.R.S. Employer
Identification Number)

**3957 Point Eden Way
Hayward, California 94545
(510) 906-4600**

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

**Kevin P. Danahy
Chief Executive Officer
Pulse Biosciences, Inc.
3957 Point Eden Way
Hayward, California 94545
(510) 906-4600**

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

**Kenneth B. Stratton, Esq.
General Counsel
Pulse Biosciences, Inc.
3957 Point Eden Way
Hayward, California 94545
(510) 906-4600**

**Adam Finerman, Esq.
Baker & Hostetler LLP
45 Rockefeller Plaza
New York, NY 10111
Tel: (212) 589-4233**

From time to time after the effective date of this registration statement.

(Approximate date of commencement of proposed sale to the public)

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box:

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer
Non-accelerated filer

Accelerated filer
Smaller reporting company
Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2) (B) of Securities Act.

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act, or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

The information in this prospectus is not complete and may be changed. The securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

Subject to Completion, dated August 11, 2023

PROSPECTUS

Pulse Biosciences, Inc.

**Up to 10,022,937 Shares of Common Stock
Offered by the Selling Securityholder**

The selling securityholder identified herein may from time to time offer or sell shares of our common stock. To the extent that the selling securityholder resells any securities, the selling securityholder may be required to provide you with this prospectus and a prospectus supplement identifying and containing specific information about the selling securityholder and the amount and terms of the securities being offered. You should read this prospectus and any applicable prospectus supplement before you invest. We will not receive any proceeds from the sale of our common stock by the selling securityholder.

The selling securityholder (which term includes his 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. We do not know when or in what amount the selling securityholder may offer the securities for sale. The selling securityholder may sell any, all or none of the securities offered in this prospectus. The selling securityholder has informed the Company that he has no present intention to sell the shares of our common stock offered in this prospectus.

We are not offering any securities for sale under this prospectus. We will not receive any of the proceeds from the sale of securities by the selling securityholder. All expenses of registration incurred in connection with this offering are being borne by us. The selling securityholder will bear all fees, discounts, concessions, or commissions of broker-dealers or agents in connection with the offering of the shares by the selling securityholder. See "Plan of Distribution" beginning on page 6 of this prospectus for more information about how the selling securityholder may sell his shares of common stock.

Our Common Stock is listed on the Nasdaq Capital Market under the symbol "PLSE." Each prospectus supplement will indicate whether the securities offered thereby will be listed on any securities exchange.

Investing in our common stock involves a high degree of risk. Please carefully read the information under the headings "Risk Factors" beginning on page 2 of this prospectus and "Item 1A – Risk Factors" of our most recent report on Form 10-K or 10-Q that is incorporated by reference in this prospectus before you invest in our 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 _____, 2023.

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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 the SEC, using a “shelf” registration process. Under this shelf registration process, the selling securityholder may from time to time sell the securities described in this prospectus in one or more offerings.

This prospectus provides you with a general description of the securities that may be offered. We may provide one or more prospectus supplements that will add, update or change information contained in this prospectus. You should read both this prospectus and any applicable prospectus supplement together with the additional information described under the heading “Where You Can Find More Information.”

We have not authorized anyone to provide you with information that is different from that contained, or incorporated by reference, in this prospectus, any applicable prospectus supplement or in any related free writing prospectus. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus and any applicable prospectus supplement or any related free writing prospectus do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the securities described in the applicable prospectus supplement or an offer to sell or the solicitation of an offer to buy such securities in any circumstances in which such offer or solicitation is unlawful. You should assume that the information appearing in this prospectus, any prospectus supplement, the documents incorporated by reference and any related free writing prospectus is accurate only as of their respective dates. Our business, financial condition, results of operations and prospects may have changed materially since those dates.

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.

“Pulse Biosciences,” the Pulse logos and other trademarks or service marks that we use in connection with the operation of our business appearing in this prospectus, including CellFX, CellFX CloudConnect, CellFX Marketplace, Nano-pulse Stimulation, and NPS, are the property of Pulse Biosciences, Inc. Solely for your convenience, some of our trademarks and trade names referred to in this prospectus are listed without the ® and TM symbols, but we will assert, to the fullest extent under applicable law, our rights to our trademarks and trade names. Also, this prospectus may contain additional trade names, trademarks or service marks of others, which are the property of their respective owners. We do not intend our use or display of any other company’s trade names, trademarks or service marks to imply a relationship with, or endorsement or sponsorship of us by, any of these other companies.

Unless expressly indicated or the context requires otherwise, the terms “Pulse,” “Company,” “we,” “us,” and “our,” in this document refer to Pulse Biosciences, Inc., a Delaware corporation, and, where appropriate, its wholly owned subsidiaries.

PROSPECTUS SUMMARY

This summary highlights selected information that is presented in greater detail elsewhere, or incorporated by reference, in this prospectus. It does not contain all of the information that may be important to you and your investment decision. Before investing in our securities, you should carefully read this entire prospectus, including the matters set forth under the section of this prospectus captioned "Risk Factors" and the financial statements and related notes and other information that we incorporate by reference herein, including our Annual Report on Form 10-K and our Quarterly Reports on Form 10-Q.

Company Overview

We are a novel bioelectric medicine company committed to health innovation using its patented Nano-pulse Stimulation ("NPS") technology, a revolutionary energy modality that delivers nanosecond-duration pulses of electrical energy, each less than a millionth of a second long, to non-thermally clear targeted cells while sparing adjacent noncellular tissue. NPS technology, also referred to as a Nanosecond Pulsed-Field Ablation ("nsPFA") technology when used to ablate cellular tissue, can be used to treat a variety of medical conditions for which an optimal solution remains unfulfilled. The Company developed its proprietary CellFX System, a novel nsPFA delivery platform, and commercialized the initial application of its nsPFA technology to treat benign lesions of the skin. In parallel, the Company has designed a variety of applicators to explore the potential use of the CellFX platform to treat disorders in other medical specialties, such as cardiology, gastroenterology, gynecology, and ear, nose and throat. These applicators include devices for open surgical procedures, endoscopic or minimally invasive procedures, and endoluminal catheters, and each has been used in preclinical studies. Based on our preclinical experience and the potential to significantly improve outcomes for patients in a large and growing market, the Company decided in 2022 to focus its efforts on the use of nsPFA and the CellFX platform in the treatment of atrial fibrillation ("AF").

Corporate Information

Pulse Biosciences, Inc., formerly Electroplate, Inc., was incorporated in the State of Nevada on May 19, 2014, and was reincorporated in the State of Delaware on June 18, 2018. 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, or that can be accessed through, our website, is not a part of this prospectus, and the inclusion of our website address is an inactive textual reference only.

Summary of the Offering

<i>Issuer:</i>	Pulse Biosciences, Inc.
<i>Shares of Common Stock Offered for Resale by Selling Securityholder:</i>	Up to an aggregate of 10,022,937 shares of our common stock.
<i>Use of Proceeds:</i>	The selling securityholder will receive all of the net proceeds from the sale of the shares of common stock registered hereunder. We will not receive any proceeds from the sale of such shares.
<i>Offering Price:</i>	The selling securityholder may sell all or a portion of the shares of common stock registered hereunder through public or private transactions at prevailing market prices or at privately negotiated prices.
<i>Market for our Common Stock:</i>	Our common stock is listed on the Nasdaq Capital Market.
<i>Nasdaq Ticker Symbol:</i>	PLSE

RISK FACTORS

An investment in our securities involves a high degree of risk. Prior to making a decision about investing in our securities, you should consider carefully the risks together with all of the other information contained or incorporated by reference in this prospectus, including any risks described in the section entitled “Risk Factors” contained in any supplements to this prospectus, together with all of the other information contained or incorporated by reference in any prospectus supplement or appearing or incorporated by reference in this prospectus. You should consider the risks, uncertainties and assumptions discussed under “Part I—Item 1A—Risk Factors” of our most recent Annual Report on Form 10-K and in “Part II—Item 1A—Risk Factors” in our most recent Quarterly Report on Form 10-Q filed subsequent to such Form 10-K that are incorporated herein by this reference, as may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future. The risks and uncertainties we have described are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our operations.

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 securityholder. 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, the sale 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.

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 of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. Words such as “anticipates,” “believes,” “could,” “estimates,” “expects,” “intends,” “may,” “might,” “plans,” “projects,” “will,” “would,” and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. These forward-looking statements include, but are not limited to, statements related to our expected business, new product introductions, results of clinical studies, expectations regarding regulatory clearance and the timing of FDA or non-US filings or approvals including meetings with FDA or non-US regulatory bodies, procedures and procedure adoption, future results of operations, future financial position, our ability to generate revenues, our financing plans and future capital requirements, anticipated costs of revenue, anticipated expenses, the effect of recent accounting pronouncements, our anticipated cash flows, our ability to finance operations from cash flows or otherwise, and statements based on current expectations, estimates, forecasts, and projections about the economies and markets in which we operate and intend to operate and our beliefs and assumptions regarding these economies and markets. 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 that we make.

Such statements appear in this prospectus, any accompanying prospectus supplement and the documents incorporated herein and therein by reference, particularly in the sections captioned “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and include statements regarding the intent, belief or current expectations of our management that are subject to known and unknown risks, uncertainties and assumptions. 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.

In addition, statements that “we believe” and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this prospectus, and although we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted a thorough inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements.

This prospectus and the documents incorporated by reference in this prospectus may contain market data that we obtain from industry sources. These sources do not guarantee the accuracy or completeness of the information. Although we believe that our industry sources are reliable, we do not independently verify the information. The market data may include projections that are based on a number of other projections. While we believe these assumptions to be reasonable and sound as of the date of this prospectus, actual results may differ from the projections.

USE OF PROCEEDS

We will not receive any of the proceeds from the sale of our securities by the selling securityholder.

SELLING SECURITYHOLDER

This prospectus relates to the possible resale by one of our stockholders, who we refer to in this prospectus as the “selling securityholder,” of up to 10,022,937 shares of our common stock acquired by the selling securityholder in a private placement as consideration for the cancellation of \$65 million aggregate principal amount, together with all accrued and unpaid interest outstanding, pursuant to that certain Loan Agreement (the “Loan Agreement”), dated as of September 20, 2022, as amended on March 17, 2023 by that certain First Amendment to Loan Agreement, by and between the Company and the selling securityholder, as previously disclosed by the Company. The following table provides the name of the selling securityholder and the number of shares of our common stock offered by such selling securityholder under this prospectus. The selling securityholder listed below has previously been granted registration rights with respect to the shares offered hereby pursuant to that Securities Purchase Agreement, dated as of April 30, 2023, by and between Pulse Biosciences, Inc. and Robert W. Duggan. The shares offered by this prospectus may be offered, from time to time, by the selling securityholder listed below. The selling securityholder is not obligated to sell any of his shares offered by this prospectus, and reserves the right to accept or reject, in whole or in part, any proposed sale of shares. The selling securityholder listed below may also offer and sell fewer than the number of shares indicated. The selling securityholder is not making any representation that any shares covered by this prospectus will or will not be offered for sale.

The number of shares and percentages of beneficial ownership set forth below are based on 54,902,942 shares of our common stock outstanding as of August 1, 2023. Beneficial ownership is determined under the SEC rules and regulations and generally includes voting or investment power over securities. We have prepared the table based on information given to us by, or on behalf of, the selling securityholder.

Name of Selling Stockholder ⁽¹⁾	Beneficial Ownership Prior to the Offering		Shares Beneficially Owned After Offering		
	Number of Shares Beneficially Owned Prior to the Offering ⁽²⁾	Percentage of Outstanding Common Stock	Number of Shares Being Registered Hereby ⁽³⁾	Number of Shares Beneficially Owned After the Offering ⁽²⁾	Percentage of Outstanding Common Stock ⁽³⁾
Robert W. Duggan ⁽⁴⁾	36,921,478	67.01%	10,022,937	26,898,541	48.82%
Total	36,921,478	67.01%	10,022,937	26,898,541	48.82%

- (1) Information concerning the selling securityholder or future transferees, pledgees, assignees, distributees, donees or successors of or from the selling securityholder or others who later hold the selling securityholder’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 August 11, 2023 are deemed outstanding. Such shares, however, are not deemed outstanding for the purposes of computing the percentage ownership of any other person.
- (3) Assumes the sale of all shares being offered pursuant to this prospectus.
- (4) Based on information obtained from Mr. Duggan, Chairman of our Board of Directors. Consists of (i) the following securities owned directly by Mr. Duggan: (a) 36,231,624 shares of common stock and (b) 197,785 shares of common stock underlying certain options exercisable within 60 days of August 11, plus (ii) 492,069 shares of common stock owned by Genius Inc., an entity of which Mr. Duggan is the sole shareholder.

In addition, we may name additional selling securityholders from time to time. Information about such additional selling securityholders, including their identities and the securities to be registered on their behalf, will be set forth in a prospectus supplement, in a post-effective amendment or in filings that we make with the SEC under the Exchange Act that are incorporated by reference in this prospectus.

DESCRIPTION OF CAPITAL STOCK

The description of our capital stock is incorporated by reference to Exhibit 4.4 to our Annual Report on Form 10-K for the fiscal year ended December 31, 2020, filed with the SEC on March 12, 2021.

The selling securityholder may offer shares of our common stock, par value \$0.001 per share. Holders of our common stock are entitled to receive dividends declared by our board of directors out of funds legally available for the payment of dividends, subject to rights, if any, of preferred stockholders. We have not paid dividends in the past and have no current plans to pay dividends. Each holder of common stock is entitled to one vote per share. The holders of common stock have no preemptive rights. We currently have no shares of preferred stock issued and outstanding.

PLAN OF DISTRIBUTION

We are registering the shares of common stock issued to the selling securityholder to permit the resale of these shares of common stock by the selling securityholder, from time to time, after the date of this prospectus. We will not receive any of the proceeds from the sale by the selling securityholder of the shares of common stock. We will bear all fees and expenses incident to our obligation to register the shares of common stock.

The selling securityholder may, from time to time, sell any or all of the 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. The selling securityholder 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 securityholder 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 securityholder 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 securityholder may arrange for other brokers-dealers to participate in sales. Broker-dealers may receive commissions or discounts from the selling securityholder (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.

In connection with the sale of the shares of common stock or interests therein, the selling securityholder 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 securityholder may also sell the shares of common stock short and deliver these securities to close out his 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 securityholder 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 securityholder 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 securityholder, 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. Any selling securityholders 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. The selling securityholder has informed us that he 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, 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 securityholder against certain losses, claims, damages, and liabilities, including liabilities under the Securities Act, and the selling securityholder may be entitled to contribution. We may be indemnified by the selling securityholder 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 securityholder specifically for use in this prospectus, or we may be entitled to contribution.

The selling securityholder 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 until the date on which all of the shares registered hereby are either sold pursuant to the registration statement or are sold or are available for resale without restriction under Rule 144 under the Securities Act. The 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 is 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 securityholder 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 securityholder or any other person. We will make copies of this prospectus available to the selling securityholder 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).

There can be no assurance that the selling securityholder will sell any or all of the shares of common stock we registered on behalf of the selling securityholder 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 securities being offered by this prospectus will be passed upon by Baker & Hostetler, LLP. Additional legal matters may be passed upon for us or any underwriters, dealers or agents by counsel that we will name in the applicable prospectus supplement.

EXPERTS

The consolidated financial statements of Pulse Biosciences, Inc. as of December 31, 2022 and 2021, and for each of the three years in the period ended December 31, 2022, incorporated by reference in this Prospectus by reference to Pulse Biosciences Inc.'s annual report on Form 10-K for the year ended December 31, 2022, have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report. Such consolidated financial statements are incorporated by reference in reliance upon the report of such firm given their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

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 www.sec.gov. Copies of certain information filed by us with the SEC are also available on our website at www.pulsebiosciences.com. Information accessible on or through our website is not a part of this prospectus.

This prospectus and any prospectus supplement is part of a registration statement that we filed with the SEC and do not contain all of the information in the registration statement. You should review the information and exhibits in the registration statement for further information on us and our consolidated subsidiaries and the securities that we are offering. Forms of any documents establishing the terms of the offered securities are filed as exhibits to the registration statement of which this prospectus forms a part or under cover of a Current Report on Form 8-K and incorporated in this prospectus by this reference. Statements in this prospectus or any prospectus supplement about these documents are summaries and each statement is qualified in all respects by reference to the document to which it refers. You should read the actual documents for a more complete description of the relevant matters.

INCORPORATION BY REFERENCE

The SEC allows us to incorporate by reference much of the information that we file with the SEC, which means that we can disclose important information to you by referring you to those publicly available documents. The information that we incorporate by reference in this prospectus is considered to be part of this prospectus. Because we are incorporating by reference future filings with the SEC, this prospectus is continually updated and those future filings may modify or supersede some of the information included or incorporated by reference in this prospectus. This means that you must look at all of the SEC filings that we incorporate by reference to determine if any of the statements in this prospectus or in any document previously incorporated by reference have been modified or superseded. This prospectus incorporates by reference the documents listed below and any future filings we make with the SEC under Sections 13(a), 13(c), 14, or 15(d) of the Exchange Act (in each case, other than those documents or the portions of those documents furnished pursuant to Items 2.02, 7.01 or 8.01 of any Current Report on Form 8-K and, except as may be noted in any such Form 8-K, exhibits filed on such form that are related to such information), until the offering of the securities under the registration statement of which this prospectus forms a part is terminated or completed:

- our Annual Report on Form 10-K for the year ended December 31, 2022;
- our Quarterly Report on Form 10-Q for the quarter ended March 31, 2023;
- our Quarterly Report on Form 10-Q for the quarter ended June 30, 2023;
- the portions of our Definitive Proxy Statement on Schedule 14A (other than information furnished rather than filed) that are incorporated by reference into our Annual Report on Form 10-K, filed with the SEC on April 14, 2023;
- our Current Reports on Form 8-K filed on March 21, 2023, March 30, 2023, May 1, 2023, May 5, 2023, May 9, 2023, May 10, 2023, and May 30, 2023, in each case only to the extent filed and not furnished; and
- The description of our common stock contained in the Registration Statement on Form 8-A relating thereto, filed on April 15, 2016, including any amendment or report filed for the purpose of updating such description.

You may request a copy of these filings, at no cost, by writing or telephoning us at the following address:

Pulse Biosciences, Inc.
3957 Point Eden Way
Hayward, California 94545
Attn: Investor Relations
510-906-4600

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution

The following table sets forth estimated expenses in connection with the issuance and distribution of the securities being registered:

	Amount to be Paid
SEC registration fee for securities offered by the selling securityholder identified in the prospectus	\$ 7,941.55
Accounting fees and expenses	22,000.00
Legal fees and expenses	20,000.00
Miscellaneous expenses	*
Total	\$ 49,941.55

Item 15. Indemnification of Directors and Officers

Section 145 of the General Corporation Law of the State of Delaware empowers a corporation to indemnify its directors and officers and to purchase insurance with respect to liability arising out of their capacity or status as directors and officers, provided that the person acted in good faith and in a manner the person reasonably believed to be in our best interests, and, with respect to any criminal action, had no reasonable cause to believe the person's actions were unlawful. The General Corporation Law of the State of Delaware further provides that the indemnification permitted thereunder shall not be deemed exclusive of any other rights to which the directors and officers may be entitled under the corporation's bylaws, any agreement, a vote of stockholders or otherwise. Our certificate of incorporation provides for the indemnification of our directors and officers to the fullest extent permitted under the General Corporation Law of the State of Delaware. In addition, our bylaws require us to fully indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by reason of the fact that such person is or was our director or officer, or is or was serving at our request as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorney's fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding, to the fullest extent permitted by applicable law.

Section 102(b)(7) of the General Corporation Law of the State of Delaware permits a corporation to provide in its certificate of incorporation that a director of the corporation shall not be personally liable to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, except (1) for any breach of the director's duty of loyalty to the corporation or its stockholders, (2) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (3) for payments of unlawful dividends or unlawful stock repurchases or redemptions or (4) for any transaction from which the director derived an improper personal benefit. Our certificate of incorporation provides that our directors shall not be personally liable to the registrant or its stockholders for monetary damages for breach of fiduciary duty as a director and that if the General Corporation Law of the State of Delaware is amended to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of our directors shall be eliminated or limited to the fullest extent permitted by the General Corporation Law of the State of Delaware, as so amended.

Section 174 of the General Corporation Law of the State of Delaware provides, among other things, that a director who willfully or negligently approves of an unlawful payment of dividends or an unlawful stock purchase or redemption may be held liable for such actions. A director who was either absent when the unlawful actions were approved, or dissented at the time, may avoid liability by causing his or her dissent to such actions to be entered in the books containing minutes of the meetings of the board of directors at the time such action occurred or immediately after such absent director receives notice of the unlawful acts.

Our policy is to enter into separate indemnification agreements with each of our directors and officers that provide the maximum indemnity allowed to directors and executive officers by Section 145 of the General Corporation Law of the State of Delaware and also to provide for certain additional procedural protections. We also maintain directors and officers coverage to protect such persons against certain liabilities.

These indemnification provisions and the indemnification agreements entered into between the registrant and the registrant's officers and directors may be sufficiently broad to permit indemnification of the registrant's officers and directors for liabilities (including reimbursement of expenses incurred) arising under the Securities Act of 1933, as amended, or the Securities Act.

Item 16. Exhibits

Exhibit Number	Exhibit Description	Incorporation by Reference			Exhibit Number	Filed Herewith
		Form	File No.	Filing Date		
2.1	Plan of Conversion of Pulse Biosciences, Inc.	8-K12B	001-37744	June 18, 2018	2.1	
3.1	Articles of Conversion	8-K12B	001-37744	June 18, 2018	3.1	
3.2	Certificate of Conversion	8-K12B	001-37744	June 18, 2018	3.2	
3.3	Certificate of Incorporation of Pulse Biosciences, Inc.	8-K12B	001-37744	June 18, 2018	3.3	
3.4	Bylaws of Pulse Biosciences, Inc.	8-K12B	001-37744	June 18, 2018	3.4	
4.1	Specimen Common Stock Certificate	8-K12B	001-37744	June 18, 2018	4.1	
4.2	Securities Purchase Agreement, dated as of April 30, 2023, by and between Pulse Biosciences, Inc. and Robert W. Duggan	8-K	001-37744	May 1, 2023	10.1	
5.1	Opinion of Baker & Hostetler LLP					X
23.1	Consent of Deloitte and Touche LLP, Independent Registered Public Accounting Firm					X
23.2	Consent of Baker & Hostetler LLP (included in the opinion filed as Exhibit 5.1 to this Registration Statement)					X
24.1	Power of Attorney (included on the signature page to this Registration Statement)					X
107	Filing Fee Table					X

Exhibit Item 17. Undertakings

- (a) The undersigned registrant hereby undertakes:
- (1) to file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
 - (i) to include any prospectus required by Section 10(a)(3) of the Securities Act of 1933, as amended (the "Securities Act");
 - (ii) to reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and
 - (iii) to include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;
provided, however, that paragraphs (1)(i), (1)(ii) and (1)(iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the Registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.
 - (2) that, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.
 - (3) to remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
 - (4) that, for the purpose of determining liability under the Securities Act to any purchaser:
 - (i) each prospectus filed by the Registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
 - (ii) each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii) or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof. *Provided, however,* that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.
 - (5) that, for purposes of determining any liability under the Securities Act, each filing of the Registrant's annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.
- (b) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.
-

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Hayward, State of California, on August 11, 2023.

PULSE BIOSCIENCES, INC

/s/ Kevin P. Danahy

By:

Kevin P. Danahy
President and Chief Executive Officer
(Principal Executive and Principal Financial Officer)

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Kevin P. Danahy and Timothy Mitsuoka, and each of them, as his or her true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments to this registration statement, including post-effective amendments, and registration statements filed pursuant to Rule 462 under the Securities Act, and to file the same, with all exhibits thereto, and all other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith and about the premises, as fully for all intents and purposes as they, he or she might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent or any of them, or their, his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Kevin P. Danahy</u> Kevin P. Danahy	President and Chief Executive Officer <i>(Principal Executive and Principal Financial Officer)</i>	August 11, 2023
<u>/s/ Robert W. Duggan</u> Robert W. Duggan	Executive Chairman of the Board of Directors	August 11, 2023
<u>/s/ Darrin R. Uecker</u> Darrin R. Uecker	Chief Technology Officer and Director	August 11, 2023
<u>/s/ Shelley D. Spray</u> Shelley D. Spray	Director	August 11, 2023
<u>/s/ Manmeet S. Soni</u> Manmeet S. Soni	Director	August 11, 2023
<u>/s/ Richard A. van den Broek</u> Richard A. van den Broek	Director	August 11, 2023
<u>/s/ Mahkam Zanganeh</u> Mahkam Zanganeh	Director	August 11, 2023
<u>/s/ Timothy H. Mitsuoka</u> Timothy H. Mitsuoka	Corporate Controller <i>(Principal Accounting Officer)</i>	August 11, 2023

BakerHostetler

Baker & Hostetler LLP

45 Rockefeller Plaza
New York, NY 10111

T 212.589.4200
F 212.589.4201
www.bakerlaw.com

August 11, 2023
Pulse Biosciences, Inc.
3957 Point Eden Way
Hayward, California 94545

Ladies and Gentlemen:

We have acted as counsel to Pulse Biosciences, Inc., a Delaware corporation (the "Company"), in connection with the filing by the Company with the Securities and Exchange Commission (the "Commission") of a Registration Statement on Form S-3, as may be amended from time to time (the "Registration Statement"), under the Securities Act of 1933, as amended (the "Act"), relating to the registration for resale of 10,022,937 shares in the aggregate (the "Shares") of the Company's common stock, par value \$0.001 per share, held by the selling stockholders named in the Registration Statement.

We have examined the Registration Statement, together with the documents incorporated by reference therein, including the related prospectus forming a part thereof (the "Prospectus"). In addition, we have examined originals or copies, certified or otherwise identified to our satisfaction, of such other instruments, documents, certificates and records which we have deemed relevant and necessary for the basis of our opinions hereinafter expressed. In such examination, we have assumed: (i) the authenticity of original documents and the genuineness of all signatures; (ii) the conformity to the originals of all documents submitted to us as copies; (iii) the truth, accuracy and completeness of the information, representations and warranties contained in the instruments, documents, certificates and records we have reviewed; (iv) that the Registration Statement, and any amendments thereto (including post-effective amendments), will have become effective under the Act; and (v) the legal capacity of all natural persons. As to any facts material to the opinions expressed herein that were not independently established or verified, we have relied upon oral or written statements and representations of officers and other representatives of the Company.

We express no opinion herein as to the laws of any state or jurisdiction other than the General Corporation Law of the State of Delaware (including the statutory provisions and all applicable judicial decisions interpreting those laws) and the federal laws of the United States of America.

We express no opinion as to (i) the effect of any bankruptcy, insolvency, reorganization, arrangement, fraudulent conveyance, moratorium or other similar laws relating to or affecting the rights of creditors generally, (ii) rights to indemnification and contribution which may be limited by applicable law or equitable principles, or (iii) the effect of general principles of equity, including, without limitation, concepts of materiality, reasonableness, good faith and fair dealing, the effect of judicial discretion and the possible unavailability of specific performance, injunctive relief or other equitable relief, and the limitations on rights of acceleration, whether considered in a proceeding in equity or at law.

On the basis of the foregoing, we are of the opinion that the Shares are validly issued, fully paid and non-assessable.

We hereby consent to the filing of this opinion as Exhibit 5.1 to the Registration Statement and to the reference to our firm under the caption "Legal Matters" in the Prospectus. In giving such consent, we do not thereby admit that we are included in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission promulgated thereunder. We assume no obligation to update or supplement any of the opinion set forth herein to reflect any changes of law or fact that may occur following the date hereof.

Very truly yours,

/s/ Baker & Hostetler LLP

BAKER & HOSTETLER LLP

Atlanta *Chicago* *Cincinnati* *Cleveland* *Columbus* *Costa Mesa* *De*
Los Angeles *New York* *Orlando* *Philadelphia* *San Francisco* *Seattle*

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement on Form S-3 of our report dated March 31, 2023, relating to the financial statements of Pulse Biosciences, Inc. appearing in the Annual Report on Form 10-K of Pulse Biosciences, Inc. for the year ended December 31, 2022. We also consent to the reference to us under the heading "Experts" in such Registration Statement.

/s/ Deloitte & Touche LLP
San Francisco, California
August 11, 2023

Calculation of Filing Fee Tables
Form S-3
(Form Type)

Pulse Biosciences, Inc.
(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered Securities

	Security Type	Security Class Title	Fee Calculation or Carry Forward Rule	Amount Registered (1)	Proposed Maximum Offering Price Per Unit (2)	Maximum Aggregate Offering Price (2)	Fee Rate	Amount of Registration Fee
Fees to be paid	Equity	Common Stock, par value \$0.001 per share	457(c)	10,022,937	\$7.19	\$72,064,917	0.00011020	\$7,941.55
						Total Offering Amounts	\$72,064,917	\$7,941.55
						Total Fees Previously Paid		—
						Total Fee Offsets		—
						Net Fee Due		\$7,941.55

(1) The shares of common stock will be offered for resale by the selling stockholders pursuant to the prospectus contained in the registration statement to which this exhibit is attached. The registration statement registers the resale of an aggregate of 10,022,937 shares of the Registrant's common stock. Pursuant to Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), the shares of common stock being registered hereunder include such indeterminate number of shares of common stock as may be issuable upon stock splits, stock dividends, or other distribution, recapitalization or similar events.

(2) Estimated in accordance with Rule 457(c) solely for the purpose of calculating the total registration fee on the basis of \$7.19 per share, which represents the average of the high and low prices of the Registrant's common stock as reported on the Nasdaq Capital Market on August 7, 2023.