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

**Form 10-K**

**(Mark One)**

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

**For the fiscal year ended December 31, 2024**
**Or**
☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
**For the transition period from to**

**Commission File Number 001-34899**

**Pulse Biosciences, Inc.**
**(Exact name of registrant as specified in its charter)**

| **Delaware** | **46-5696597** |
|---|---|
| **(State or other jurisdiction of incorporation or organization)** | **(I.R.S. Employer Identification No.)** |
| **601 Brickell Key Drive, Suite 1080 Miami, FL** | **33131** |
| **(Address of principal executive offices)** | **(Zip Code)** |

**Registrant's telephone number, including area code: (510) 906-4600**

**Securities registered pursuant to Section 12(b) of the Act:**

| **Title of Each Class** | **Trading Symbol(s)** | **Name of Each Exchange on Which Registered** |
|---|---|---|
| **Common Stock, par value $0.001 per share** | **PLSE** | **The Nasdaq Stock Market LLC** |

**Securities registered pursuant to Section 12(g) of the Act: None**

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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 | ☐ | Accelerated filer | ☐ |
| Non-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 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☐

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

Aggregate market value of registrant's common stock held by non-affiliates of the registrant on June 30, 2024, the last business day of the registrant's most recently completed second fiscal quarter, based upon the closing price of the registrant's common stock on such date as reported by Nasdaq Capital Market, was approximately $182,956,030. Shares of voting stock held by each officer and director have been excluded in that such persons may be deemed to be affiliates. This assumption regarding affiliate status is not necessarily a conclusive determination for other purposes.

Number of shares outstanding of the registrant's common stock as of March 21, 2025: 67,273,800

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"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 annual report on Form 10-K (this "Annual Report"), including CellFX, CellFX CloudConnect, Nano-pulse Stimulation, nsPFA, nanosecond-PFA, CellFX nsPFA, and NPS, are the property of Pulse Biosciences, Inc. Solely for your convenience, some of our trademarks and trade names referred to in this Annual Report are listed without the ® and ™ symbols, but we will assert, to the fullest extent under applicable law, our rights to our trademarks and trade names. Also, this Annual Report 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.

## SPECIAL NOTE ABOUT FORWARD-LOOKING STATEMENTS

This report contains "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). Forward-looking statements relate to expectations concerning matters that are not historical facts. 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 and adoption rates, sales forecasts, results of clinical studies, expectations regarding regulatory clearance and the timing of FDA or non-US filings or approvals, procedure adoption, future financial position, our ability to generate revenues, our financing plans and future capital requirements, anticipated costs of revenue, anticipated expenses, 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. You should read the "Risk Factors" section of this Annual Report for a discussion of important factors that could cause actual results to differ materially from the results described in or implied by the forward-looking statements contained herein. We do not assume any obligation to update any forward-looking statements.

In addition, statements that "we believe" and similar statements reflect our current beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this Annual Report, 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 Annual Report and any documents incorporated by reference 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 other projections. While we believe these assumptions and projections are reasonable and sound, as of the date of this Annual Report, actual results may differ from the projections.

## SUMMARY OF RISK FACTORS

**Summary**

Below is a summary of the principal factors that make an investment in Pulse Biosciences, Inc. speculative or risky. The following summary does not contain all of the information that may be important to you, and you should read the below summary in conjunction with the more detailed discussion of risks set forth under the heading "Risk Factors" in Part I, Item IA of this Annual Report on Form 10-K.

**Risks Related to Our Financial Position and Need for Additional Capital**

- We will need to obtain additional funding to finance our operations and complete the development and commercialization of our products. If we do not receive substantial capital when needed, we may be forced to restrict our operations or delay, reduce or eliminate our product development programs.
- We depend heavily on the success of NPS to nonthermally clear targeted cells while sparing adjacent noncellular tissue. If we are unable to successfully develop and commercialize this patented technology, or experience significant delays in doing so, we may extend the period during which we will incur significant financial losses as an organization.
- We are a development-stage company with very limited experience commercializing products. We have incurred significant losses since our inception. We anticipate that we will continue to incur losses for at least the next several years and may never generate profits from operations or maintain profitability.
- We will need to raise additional capital, which may result in further dilution to our investors, or incur indebtedness. The servicing of future debt may impair our liquidity position.

**Risks Related to the Development and Commercialization of our Medical Products**

- Medical device development and commercialization is a complex, time-consuming and expensive process. Our industry is fraught with risk and a high rate of failure.
- We can provide no assurance that our clinical product candidates, including our product candidates for the treatment of atrial fibrillation ("AF"), such as our nsPFA Cardiac Clamp and our nsPFA 360° Cardiac Catheter, will obtain regulatory approval or that the results of clinical studies will be favorable.
- We have very limited sales and marketing experience and we can give no assurances that our devices will be adopted by surgeons or other physicians to treat any medical condition.
- Regulatory requirements and timelines may affect the scope and timeline of our trials and the potential market for our product candidates, including the possibility of significant delays to any product launch.
- The medical device industry is characterized by intense competition, rapid technological changes, new product introductions and enhancements, and evolving industry standards. If we do not develop and obtain regulatory clearances or approvals for new products or product enhancements in time to meet market demand, or if there is insufficient demand for our products or enhancements, our results of operations will suffer.
- Commercialization of our product candidates could be delayed or prevented if we experience any number of possible unforeseen events in connection with our clinical trials.
- If clinical trials of our product candidates fail to demonstrate safety and effectiveness to the satisfaction of applicable regulatory bodies, such as the U.S. Food and Drug Administration or the European Medicines Agency, we may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of our medical devices.

**Risks Related to Our Industry and Market**

- We face substantial competition, which may result in others developing or commercializing competitive products before or more successfully than we do.
- We compete against well-established incumbent technologies offering products in cardiology, oncology, and dermatology, as well as in minimally invasive procedures. All of these companies currently have greater financial, technical, research, and/or other resources than we do and have larger and more established manufacturing capabilities and marketing, sales, and support functions.
- We may pursue business development opportunities to expand or enhance our pipeline of potential products, including through potential acquisitions of and/or collaborations with other entities or the acquisition of products unrelated to NPS technology, which may not achieve intended results or could increase the number of our outstanding shares, result in a change of control or cause us to incur a material amount of indebtedness.

**Legal, Tax, Regulatory, and Compliance Risks**

- Our ability to commercialize any of our product candidates is subject to substantial regulatory and legislative uncertainty, including as to pricing, reimbursement practices or other healthcare initiatives which could harm our business.
- We may face costly legal claims, in particular related to product liability and intellectual property infringement.
- Trade tariffs and changes at the U.S. FDA may adversely affect our operating costs and timelines.
- We are subject to certain U.S. and foreign anti-corruption, anti-money laundering, export control, sanctions, and other trade laws and regulations. We can face serious consequences for violations.

**Risks Related to Our Intellectual Property, Cybersecurity and Data Privacy**

- We rely upon patents to protect our technology. We may be unable to protect our intellectual property rights and we may be liable for infringing the intellectual property rights of others.
- Our actual or perceived failure to comply with stringent and changing obligations related to data privacy and security could lead to regulatory investigations and actions, litigation, fines and penalties, disruptions to our business operations, reputational harm, loss of revenue and profits, and other adverse business impacts.
- We are exposed to risks related to cybersecurity and data privacy threats and incidents and we are subject to restrictions and changes in laws and regulations governing our data privacy and data protection, any of which could have a material adverse effect on our business.

**Risks Related to Corporate Governance and Employee Relations**

- Our future success depends on our ability to retain our chief executive officers and other key executives and to attract, retain and motivate qualified personnel.
- Our Co-Chairman owns approximately 73% of the voting power of the outstanding shares of our common stock and, as a result, investors may have limited ability to affect either the corporate governance of the Company or the taking of certain major decisions.

**Risks Related to Owning Our Common Stock**

- Substantial future sales of our shares of common stock in the public market, or the perception that these sales could occur, could cause the price of the shares to decline significantly, even if our business is doing well.
- The prices of our shares of common stock may be volatile and fluctuate substantially, which could result in substantial losses for our stockholders.
- 73% of our outstanding shares are owned by our Co-Chairman, Robert Duggan, and his affiliates, which can reduce liquidity of our stock. Historically, our trading volume on Nasdaq has been low.

## Part I

### Item 1. Business

#### Overview

We are a novel ablation company committed to health innovation using our 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 nonthermally clear or kill targeted cells. NPS technology, also referred to as 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. We developed our 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, we have designed a variety of applicators, or disposables, 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, we decided in 2022 to focus our primary efforts on the use of nsPFA energy and the CellFX platform in the treatment of atrial fibrillation and in a select few other markets where it could have a profound positive impact on healthcare for both patients and providers, such as surgical soft tissue ablation.

*CellFX nsPFA Percutaneous Electrode System*

Our first product for soft tissue ablation in a surgical setting, the nsPFA Percutaneous Electrode System, consists of a disposable, percutaneous, needle electrode for use with our proprietary CellFX Console. This novel electrode is designed to harness and deliver the key advantages of nsPFA energy, enabling precise nonthermal removal of cellular tissue without inducing thermal necrosis.

After years of preclinical development and testing, in June 2023, we initiated a first-in-human study using our proprietary nsPFA-enabled percutaneous electrode. This study was conducted by Professor Stefano Spiezia at the Ospedale del Mare in Naples, Italy, to help us better understand and confirm the mechanism of action and tissue response of nsPFA energy in internal organs such as the thyroid. Thirty study subjects were treated, all of whom tolerated the procedure well with no reported serious side effects. Ultrasound images post-procedure showed treated portions of the benign thyroid nodules were mostly resorbed with no sign of scarring or fibrosis by ultrasound, which can be a side effect of other ablation modalities using thermal energies.

In parallel, in November 2023, we filed a premarket notification 510(k) with the FDA for clearance to commercialize our novel nsPFA Percutaneous Electrode System in the United States. In March 2024, we received FDA 510(k) clearance for our nsPFA Percutaneous Electrode System for use in the ablation of soft tissue in percutaneous and intraoperative surgical procedures. More recently, in August 2024, we received FDA 510(k) clearance for a second size of the percutaneous electrode needle, which we believe will provide our customers with an additional treatment option for their patients.

Having secured 510(k) clearance to market and sell the nsPFA Percutaneous Electrode System in the United States with different sizes of percutaneous electrode needles, we have engaged with experts in the field of soft tissue ablation to gather information that will help shape our future commercial endeavors. To date, we have placed our CellFX System with eight sites in the United States and these sites have been performing initial patient treatments and evaluating the CellFX System under short-term evaluation agreements. To date, the clinicians in our pilot program have completed more than 70 patient procedures. We expect to pursue more clinical evidenced-based milestones throughout 2025 in connection with evaluating the early pilot commercialization of our percutaneous electrodes, and we expect to commence a pivotal clinical trial in mid-2025 to support a specific labeling indication to commercialize the nsPFA Percutaneous Electrode System in the United States as a treatment for benign thyroid nodules.

*Our Cardiac Surgical Program*

Atrial fibrillation ("AF") is a type of heart arrythmia, or irregular heartbeat, caused by faulty electrical signals in the heart. AF is a highly prevalent condition and is growing significantly with an ageing population. It is estimated that 43 million people worldwide are affected by AF. Treatment requires the precise and safe ablation of heart tissue to block or otherwise prevent these faulty electrical signals from causing the irregular heartbeat, and we believe nsPFA technology is uniquely suited to perform an integral role for this application and that it will prove to be highly differentiated from standard thermal energy modalities in use today.

The results of preclinical and clinical testing of both our nsPFA cardiac products, namely our surgical ablation clamp and our endocardial ablation catheter, have exceeded our expectations and initial data have been presented at physician and industry conferences. While these devices serve different physicians, the application of the energy to safely and effectively ablate cardiac tissue and the treatment of AF are the same, and we believe there will be important synergies realized through their contemporaneous development. The Company's cardiac surgical ablation clamp and cardiac endocardial ablation catheter both generate our proprietary nsPFA pulses of electrical energy. We discuss each of these products under development in more detail below.

*CellFX nsPFA Cardiac Clamp*

Our surgical cardiac ablation clamp is designed for use by cardiac surgeons during the surgical treatment of AF. The standard of care surgical procedure for the treatment of AF is performed by cardiac surgeons and called the Cox-Maze procedure. The Cox-Maze procedure typically uses thermal ablation technologies, such as heat with radiofrequency ablation or cold with cryoablation, to create specific ablation lines in the heart muscle. These ablation lines block the conduction of electrical impulses and can cure patients of their AF.

We believe our nsPFA technology can provide important advantages over today's thermal modalities in creating these ablation lines. For example, surgeons using the CellFX System should be able to deliver faster ablations and through thicker tissue than thermal modalities because of the nonthermal mechanism of action that nsPFA employs, which is not affected by heatsinks such as blood in the heart. In preclinical studies, our nsPFA Cardiac Clamp has consistently achieved transmural ablations in less than two seconds, independent of tissue type or thickness. Moreover, thermal modalities can cause char formation on electrode surfaces which can cause gaps in the ablation lines that might lead to treatment failure. This should not be an issue with nsPFA ablation given its nonthermal nature. Also, because nsPFA ablation does not impact acellular tissue, such as collagen or cartilage, our technology has the potential to offer significant safety advantages over thermal modalities by allowing surgeons to ablate near and into vessels and valves without concern of permanent damage. And finally, nsPFA ablation has been shown to spare nerves of any permanent damage, even when treated directly, which is another concern for thermal modalities. We believe these advantages will be important to cardiac surgeons, so we are working with leaders in the field to develop this technology quickly. In May 2023, we appointed Dr. Gan Dunnington as our Chief Medical Officer, Cardiac Surgery. Dr. Dunnington is a cardiothoracic surgeon and the Director of Cardiothoracic Surgery at St. Helena Hospital (Napa Valley). He specializes in minimally invasive complex cardiothoracic procedures for the treatment of AF. And, in October 2023, we appointed Dr. Niv Ad as our Chief Science Officer, Cardiac Surgery. Dr. Ad specializes in the surgical treatment of atrial fibrillation, minimally invasive heart surgery and other advanced heart surgery techniques and transcatheter therapies.

Over the last several years, we have been developing the cardiac ablation clamp from proof-of-concept to prototype, and we now have what we believe will be our initial commercial design. The device was designed with the input of key physicians in cardiac surgery, and we believe it will offer a highly differentiated option relative to the standard of care thermal modalities. Since 2023, we have been meeting with the FDA to discuss the regulatory requirements for a potential 510(k) clearance or other approval to market our cardiac clamp in the United States. Today, we plan to pursue a PMA application for FDA approval to market the cardiac clamp specifically as a surgical way to treat AF. Seeking an AF indication through a PMA application will require pivotal clinical data to support the application. We expect to begin our pivotal clinical trial of the cardiac surgical clamp for AF in mid-2025. With PMA approval, we expect that we would then commercialize the nsPFA Cardiac Surgical System in the United States specifically as a treatment for AF. Separately, we have already enrolled thirty patients in our first-in-human clinical feasibility study of the cardiac clamp, a multi-site study of AF in the Netherlands. All of the patients in our first-in-human study have tolerated the procedure well and acute data have been encouraging. We expect data from this study will provide important support for our IDE submission for the pivotal clinical trial as well as initial evidence of the effectiveness and safety of our cardiac surgical ablation clamp as a surgical way to treat AF.

In July 2024, we received Breakthrough Device Designation from the FDA for our nsPFA Cardiac Surgery System for the treatment of AF. The FDA's Breakthrough Devices Program is a voluntary program for certain medical devices that potentially provide for more effective treatment or diagnosis of a life-threatening or irreversibly debilitating disease or condition. More recently, our Cardiac Surgery System was enrolled in the FDA's Total Product Life Cycle (TPLC) Advisory Program (TAP). The FDA's Center for Devices and Radiological Health (CDRH) launched the TAP program to help generate more rapid development of high-quality, safe, effective, and innovative medical devices that are critical to public health. TAP's primary goal is to expedite patient access to innovative medical devices by providing early, frequent and strategic communications with the FDA and facilitating engagement with other key parties for developers of devices of public health importance. Both programs are designed to expedite the development, assessment, and review of medical devices for premarket approval, 510(k) clearance, or De Novo marketing authorization. Breakthrough Devices, even those enrolled in the FDA's TAP Program, must still meet the FDA's rigorous standards for device safety and effectiveness in order to be authorized for marketing, however.

*CellFX nsPFA 360° Cardiac Catheter*

We believe our endocardial catheter ablation device will have many of the same advantages that the surgical ablation clamp appears to have with respect to both performance and safety compared to standard thermal modalities. Our catheter is uniquely designed to provide a circumferential, or circular, ablation in a single treatment cycle. We believe this will enable faster treatment times compared to what is currently performed with thermal modalities, especially when ablating around the pulmonary veins, a common treatment approach for AF.

In recent years, Pulsed Field Ablation ("PFA") has gained attention in electrophysiology for the treatment of AF because of its safety profile and speed. Current clinical products employing PFA in AF treatment differ from nsPFA technology in that the pulse widths are longer, typically in the microsecond domain. We believe nsPFA technology, which delivers pulses of electrical energy that are each less than a millionth of a second long, can offer similar safety advantages as PFA and may provide improved efficacy advantages based on the circumferential design of our catheter and because it appears nsPFA technology can create deeper ablations. We believe these advantages will be important to electrophysiologists, so we are working with leaders in the field to develop this technology quickly. In 2024, we appointed David Kenigsberg, M.D. as Chief Medical Officer of Electrophysiology.

Similar to the cardiac ablation clamp, our proprietary catheter has been in development for several years and we have been working with leaders in the electrophysiology field to test the catheter in preclinical studies. After seeing encouraging preclinical results, in December 2023, we initiated a clinical study in Prague, Czech Republic, to test our nsPFA 360° Cardiac Catheter in patients with AF and both acute data and remapping data from this study have been promising. We therefore expanded the initial clinical protocol in 2024 to enroll more than 80 patients, from 30, and to include participation by two additional sites. The study is now almost fully enrolled. Investigators have successfully remapped more than half of the study participants and we have been encouraged by the results seen in the study. Therefore, given the compelling data to date, we expect to commence a U.S. IDE pivotal clinical study of our proprietary 360° cardiac catheter sometime in mid-2025. We continue to believe we will need PMA approval from the FDA in order to market and sell our catheter in the United States.

*The CellFX Console*

The CellFX Console is a tunable, software-enabled, console-based platform, designed to accommodate the clinical workflow preferred by physicians. The CellFX System is configured to accept a variety of disposable applicators or electrodes across a range of clinical applications. In February 2021, we received 510(k) clearance from the FDA for the CellFX System for dermatologic procedures requiring ablation and resurfacing of the skin. In January 2021, we received Conformité Européene ("CE") marking approval for the CellFX System, which allows for marketing of the system in the European Union ("EU"). Shortly after these regulatory clearances, we began commercializing the CellFX System in dermatology for the treatment of benign skin lesions. However, in September 2022, we announced a shift in our focus from dermatology to cardiology and soft tissue ablation. We have ceased all commercial sales and marketing operations in dermatology. At the present time, we continue to support our remaining commercial users and remain open to a potential commercial partnership. The CellFX System is being used for our current efforts in the treatment of AF and as part of the nsPFA Percutaneous Electrode System.

We continue to believe nsPFA ablation, as well as NPS technology more broadly, has the potential to provide superior outcomes across a variety of medical disciplines and we may seek partnership opportunities to develop additional applications.

**Intellectual Property**

We maintain a portfolio of intellectual property surrounding our CellFX System and our NPS technology platform. As a medical technology company, our current patents and ongoing intellectual property development are, and will continue to be, a priority for our business. We believe our intellectual property is an important competitive advantage for us. We also rely on trade secrets, know-how, continuing technological innovations, and licensing opportunities to further develop, maintain, and strengthen our competitive position. We actively protect our intellectual property through a combination of patent registrations, trademarks, and copyright protections; confidentiality agreements with our employees, consultants, and other parties; and access control to sensitive information.

Today, on a worldwide basis, we own over 220 issued patents and pending patent applications, and we have an exclusive license to over 65 additional issued patents and pending patent applications. The vast majority of our granted patents have an expiration date between 2035 and 2042. As in the past, we plan to continue to file new patent applications to protect our systems, algorithms, applicators, methods, and designs of our technologies and products as they evolve. Medical technologies such as ours may be used in many different applications and incorporate several patentable features, and our strategy will be to always strive to protect our products and technologies with multiple patents directed to the variety of features and applications, in order to establish a strong and useful patent portfolio against competitors, such that an expiration of a single patent should not lessen our overall comprehensive coverage and competitive advantage. We believe our NPS platform and CellFX System are protected by several issued patents, as well as pending applications.

**Employees and Human Capital**

As of December 31, 2024, we had 75 employees, of which most were located at our facility in Hayward, California. Of these employees, half were engaged in research and development activities and half were engaged in operations, marketing, business development, and general and administrative activities.

*Talent Acquisition and Development.* We are committed to providing a respectful work environment to our diverse workforce. We provide equal employment opportunities to all persons regardless of race, age, color, gender, sexual orientation, national origin, physical or mental disability, religion, or any other characteristic protected by federal, state, or local law. We believe our employees are essential to our success and our ability to attract, develop, and retain key talent is a vital part of that. Our philosophy is to both develop talent from within and to strategically recruit key external talent. Our overall talent acquisition and retention strategy is designed to attract and retain diverse and qualified candidates to enable the success of the Company and achievement of our performance goals. The skills, experience and industry knowledge of key employees significantly benefit our operations and performance.

*Compensation and Benefits Program.* Our compensation program is designed to attract, motivate, and retain talented individuals who possess the skills necessary to support our business and contribute to our strategic goals, creating long-term value for our stockholders. We provide employees with competitive compensation packages that include base salary, annual incentive bonuses, 401(k), and equity awards tied to the value of our stock price. Our comprehensive benefits package also includes medical, dental, vision, life and disability plans, and an employee assistance program.

*Wellness and Safety.* The health and safety of our employees is of utmost importance to us. We currently operate under a hybrid model of onsite and remote work with our technical teams being mostly onsite on a full-time basis. We have policies and guidelines which are designed to protect the safety of our employees.

**Competition**

The applications we intend to target are subject to intense competition from rapidly evolving companies and new scientific discoveries. We compete against well-established incumbent technologies offering products in cardiology, oncology, and dermatology, as well as in minimally invasive procedures. For example, Abbott Laboratories, AtriCure, Inc., Boston Scientific Corporation, Johnson & Johnson (Biosense Webster), Medtronic plc, and several other companies all sell ablation-based surgical and catheter-based medical devices for the treatment of heart arrhythmias, including AF, and additionally, many of these companies are also actively developing or already have PFA products for the treatment of AF. All of these companies currently have greater financial, technical, research, and/or other resources than we do and have larger and more established manufacturing capabilities and marketing, sales, and support functions. Our future success will depend on our ability to establish and maintain a competitive position in current and future technologies. Our technology is unique and differentiated in that NPS technology can influence many cellular functions depending on the energy applied. When it is used to stimulate primarily regulated cell death, such as through nsPFA ablation, we believe it will be less traumatic to treated tissue and result in less scarring or collateral damage to surrounding tissues, which we feel will give us a competitive advantage over these more established companies despite formidable competition.

**Government Regulation**

The CellFX System is a medical device subject to extensive and ongoing regulation by the FDA under the Federal Food, Drug, and Cosmetic Act and its implementing regulations, as well as other federal and state regulatory bodies in the United States. These laws and regulations govern, among other things, product design and development, preclinical and clinical testing, manufacturing, packaging, labeling, storage, recordkeeping and reporting, clearance or approval, marketing, distribution, promotion, import and export, and post-marketing surveillance.

The FDA regulates the medical device market to ensure the safety and efficacy of our products. For medical devices that require pre-market review, the FDA allows for three clearance/approval pathways for a medical device to be commercialized: (i) approval via a Pre-market Approval Application ("PMA"), (ii) clearance of a 510(k) submission, or (iii) submission of a de novo application. The FDA has established three different classes of medical devices, based on the level of risk associated with using a device and consequent degree of regulatory controls needed to govern its safety and efficacy, as well as the appropriate clearance/approval pathway needed to obtain authorization to legally market a medical device in the United States.

Class I and Class II devices are considered low and moderate risk devices. Most Class I devices are exempt from premarket notification. Most Class II devices require 510(k) clearance from the FDA in order to be marketed in the U.S. A 510(k) Premarket Notification is a premarket submission made to the FDA to demonstrate that the device to be marketed is substantially equivalent to a legally marketed Class II device, *i.e.,* a predicate device. Companies making a 510(k) submission must compare their 510(k)-candidate device to a predicate device and establish substantial equivalence to the satisfaction of FDA. A device previously cleared under 510(k) or a device approved through a de novo application can be used as a predicate device for later developed substantially equivalent medical devices. However, establishing substantial equivalence in a 510(k) submission requires the candidate device to have the same intended use and the same technological characteristics as a predicate device. The FDA has a 90-calendar day review goal from the date of receipt of the 510(k) to either authorize or decline commercial distribution of the device, but clearance generally takes longer than 90 days. During the review process, the FDA may also request additional information which extends the review process. If the FDA decides that the product is not substantially equivalent to a predicate device, a clearance will not be granted, and the device cannot be commercialized. If a 510(k) submission is rejected by FDA, the applicant may be required to seek premarket authorization through the de novo pathway or the premarket approval pathway, which are more costly and will generally take longer for FDA approval.

Medical devices regarded as the highest risk by the FDA are typically designated Class III and generally require the submission of a PMA application for approval. Class III devices generally include life-sustaining, life-supporting, or implantable devices or devices without a known predicate technology already approved by the FDA. A PMA application must be accompanied by substantial data that supports the reasonable safety and effectiveness of the device, which includes the provision of preclinical, clinical, technical, manufacturing, and labeling information. After the FDA determines the application is sufficiently complete to commence a substantive review, it has 180 days to review the submission, but it can typically take longer (up to several years) as this regulatory body can request additional data, including clinical data or clarifications. The FDA may also impose additional regulatory scrutiny for a PMA, including the institution of an outside advisory committee (panel review) to assess the application or provide recommendations as to whether to approve the device. Although the FDA is not required to follow the recommendation of an advisory panel, it generally does. As part of the review, the FDA will also inspect the manufacturing operations of the company requesting approval to verify compliance with Quality System regulations.

If a new medical device does not qualify for the 510(k) premarket notification process because no predicate device can be identified to which it is substantially equivalent, the device is automatically classified into Class III. The Food and Drug Administration Modernization Act of 1997 established a new route to market for low to moderate risk medical devices that are automatically placed into Class III due to the absence of a predicate device, called the "Request for Evaluation of Automatic Class III Designation," or the de novo classification process. This process allows a manufacturer whose novel device is automatically classified into Class III to request down-classification of its medical device into Class I or Class II on the basis that the device presents low or moderate risk, rather than requiring the submission and approval of a PMA. If the manufacturer seeks reclassification into Class II, the manufacturer must include a draft proposal for special controls that are necessary to provide a reasonable assurance of the safety and efficacy of the medical device. The FDA may reject the reclassification petition if it identifies a legally marketed predicate device that would be appropriate for a 510(k) or determines that the device is not low to moderate risk and requires PMA or that general controls would be inadequate to control the risks and special controls cannot be developed.

After a device receives 510(k) clearance or PMA approval, any modification that could significantly affect its safety or effectiveness, or that would constitute a major change in its intended use, will require a new 510(k) clearance or PMA Supplemental approval. The FDA requires each manufacturer to make this determination initially, but the FDA can review any such decision and can disagree with a manufacturer's determination. If the FDA disagrees with the determination not to seek a new 510(k) clearance or PMA Supplement, the FDA may retroactively require a new 510(k) clearance or PMA Supplement to be submitted. The FDA could also require a manufacturer to cease marketing and distribution and/or recall the modified device until clearance or approval is obtained. Also, in these circumstances, the manufacturer may be subject to significant regulatory fines, penalties, and warning letters.

***Pervasive and Continuing Regulation***

Even after a device is placed on the market with FDA clearance or approval, numerous regulatory requirements continue to apply. These include:

- the FDA's Quality System Regulation ("QSR") which requires manufacturers, including third-party manufacturers, to follow stringent design, testing, control, documentation, and other quality assurance procedures during all aspects of the manufacturing process**;**
- labeling regulations and FDA and FTC prohibitions against the promotion of products for uncleared, unapproved, or off-label uses;
- medical device reporting regulations, which require that manufacturers report to the FDA if their device may have caused or contributed to a death or serious injury or malfunctioned in a way that would likely cause or contribute to a death or serious injury if the malfunction were to recur; and
- post-market surveillance regulations, which apply when necessary to protect the public health or to provide additional safety and efficacy data for the device.

The FDA has broad post-market and regulatory enforcement powers, and we must comply with the post-market surveillance regulations, including medical device reporting regulations. We are required to report to the FDA information if a Company device has, or may have, caused or contributed to a death or serious injury or has malfunctioned in a way that would likely cause or contribute to death or serious injury, if the malfunction of the device or one of our similar devices were to recur. If we fail to report events required to be reported to the FDA within the required timeframes, or at all, the FDA could take enforcement action and impose sanctions against us. Any such adverse event involving our products also could result in future voluntary corrective actions, such as recalls or customer notifications, or agency action, such as inspection or enforcement action. Any corrective action, whether voluntary or involuntary, as well as defending ourselves in a lawsuit, would require our time and capital, distract management from operating our business, and may harm our reputation and have a material adverse effect on our business, financial condition, and results of operations.

We may be subject to unannounced inspections by the FDA and the Food and Drug Branch of the California Department of Public Health to determine our compliance with the QSR and other regulations, and these inspections may include the manufacturing facilities of our suppliers.

Failure to comply with applicable regulatory requirements can result in enforcement action by the FDA, which may include any of the following sanctions:

- warning letters, fines, injunctions, consent decrees, and civil penalties;
- repair, replacement, refunds, recall, or seizure of our products;
- operating restrictions, partial suspension, or total shutdown of production;
- refusing our requests for 510(k) clearance or premarket approval of new products, new intended uses, or modifications to existing products;
- withdrawing 510(k) clearance or premarket approval that has already been granted; and
- criminal prosecution.

***Regulatory System for Medical Devices in Europe***

The European Union (the "EU") consists of 27-member states and has a coordinated system for the authorization of medical devices. Marketing medical devices in the EU is subject to compliance with the Medical Devices Directive 93/92/EEC (MDD) and the European Union Medical Device Regulation (2017/745 or EU MDR) following its entry into application on May 26, 2020. A medical device may be placed on the market within the EU only if it conforms to certain "essential requirements" and bears the CE Mark. The most fundamental and essential requirement is that a medical device must be designed and manufactured in such a way that it will not compromise the clinical condition or safety of patients, or the safety and health of users and others. In addition, the device must achieve the essential performance(s) intended by the manufacturer and be designed, manufactured, and packaged in a suitable manner.

Manufacturers must demonstrate that their devices conform to the relevant essential requirements through a conformity assessment procedure. The nature of the assessment depends upon the classification of the device. The classification rules are mainly based on three criteria: (i) the length of time the device is in contact with the body, (ii) the degree of invasiveness, and (iii) the extent to which the device affects the anatomy. Conformity assessment procedures for all but the lowest risk classification of device involve a notified body. Notified bodies are often private entities and are authorized or licensed to perform such assessments by government authorities. Manufacturers usually have some flexibility to select a notified body for the conformity assessment procedures for a particular class of device and to reflect their circumstances, *e.g.*, the likelihood that the manufacturer will make frequent modifications to its products. Conformity assessment procedures require an assessment of available clinical evidence, literature data for the product, and post-market experience in respect of similar products already marketed. Notified bodies also may review the manufacturer's quality systems. If satisfied that the product conforms to the relevant essential requirements, the notified body issues a certificate of conformity, which the manufacturer uses as a basis for its own declaration of conformity and application of the CE Mark. Application of the CE Mark allows the general commercializing of a product in the EU. The product can also be subjected to local registration requirements depending on the country.

The EU MDR, which repealed and replaced the MDD, entered into force on May 25, 2017 with a transition period extending until May 26, 2021. The EU MDR clearly envisages, among other things, stricter controls of medical devices, including strengthening of the conformity assessment procedures, increased expectations with respect to clinical data for devices, and pre-market regulatory review of high-risk devices. The EU MDR also envisages greater control over notified bodies and their standards, increased transparency, more robust device vigilance requirements, and clarification of the rules for clinical investigations. Under transitional provisions, medical devices with notified body certificates issued under the MDD prior to May 26, 2020, and which have not been significantly changed, may continue to be placed on the market for the remaining validity of the certificate, until December 2028 at the latest. After the expiry of any applicable transitional period, only devices that have been CE marked under the EU MDR may be placed on the market in the EU.

**Environmental**

We are subject to federal, state, and local laws, rules, regulations, and policies governing the use, generation, manufacture, storage, air emission, effluent discharge, handling, and disposal of certain hazardous and potentially hazardous substances used in connection with our operations. Although we believe that we have complied with these laws and regulations in all material respects and, to date, have not been required to take any action to correct any noncompliance, there can be no assurance that we will not be required to incur significant costs to comply with environmental regulations in the future.

**Insurance**

We maintain product and clinical trial liability insurance coverage which includes a maximum of per claim and annual aggregate policy limits, subject to self-insured retentions. The policy covers, subject to policy conditions and exclusions, claims of bodily injury and property damage from any product manufactured by us or from trial-related adverse events.

There is no assurance that our level of coverage is adequate. We may not be able to sustain or maintain our current level of coverage and cannot assure you that adequate insurance coverage will continue to be available on commercially reasonable terms, or at all. A successful product liability claim may exceed our existing coverages and may make future coverages significantly more expensive, if available at all.

In May 2022, the Company determined not to renew its annual director and officer liability insurance policy due to disproportionately high premiums quoted by insurance companies. Instead, on May 31, 2022, the Company and Robert W. Duggan, the Company's Co-Chairman, entered into a letter agreement (the "Letter Agreement") pursuant to which Mr. Duggan agreed with the Company to personally provide indemnity coverage for a one-year period, and he agreed to deposit cash and/or marketable securities into a third-party escrow, as security for these obligations, if requested by the Company. On May 31, 2023, the last day of the one-year period, the Company paid Mr. Duggan a fee of $1.0 million in consideration of the obligations set forth in the Letter Agreement. As of December 31, 2024, there were no additional amounts owed to Mr. Duggan under the Letter Agreement.

In May 2023 and 2024, the Company secured director and officer liability insurance from third-party insurance carriers through brokered transactions.

**Available Information**

Effective June 18, 2018, Pulse Biosciences reincorporated as a Delaware Corporation. We were originally incorporated in Nevada on May 19, 2014 under the name Electroblate, Inc. and changed our name to Pulse Biosciences, Inc. effective December 8, 2015. Our corporate offices are located at 601 Brickell Key Drive, Suite 1080, Miami, Florida, 33131. Our telephone number is (510) 906-4600.

Our website is located at www.pulsebiosciences.com. The information that can be accessed through our website is not incorporated into this Annual Report on Form 10-K, and the inclusion of our website address is an inactive textual reference only. Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to reports filed or furnished pursuant to Sections 13(a) and 15(d) of the Securities Exchange Act of 1934, as amended, are available free of charge through the "Investor Relations" section of our website as soon as reasonably practicable after we electronically file such material with, or furnish it to, the Securities and Exchange Commission ("SEC").

Additionally, we use our website as a channel for distribution of important company information. Important information, including press releases, analyst presentations and financial information regarding us, as well as corporate governance information, is routinely posted and accessible on the "Investor Relations" section of the website, which is accessible by clicking "Investors" on our website home page.

**Item 1A. Risk Factors**

*Investing in our common stock involves a high degree of risk. You should carefully consider the risks and uncertainties described below, together with all of the other information in this Annual Report, including our financial statements and related notes, which could have a material adverse effect on our business, financial condition, results of operations, and prospects. The risks described below are not the only risks facing us. Risks and uncertainties not currently known to us or that we currently deem to be immaterial also may materially affect our business, financial condition, results of operations, and prospects. In addition, any worsening of the economic environment or political landscape may exacerbate the risks described below, any of which could have a material impact on us.*

**Risks Relating to Our Business, Industry and Financial Condition**

***Because we have a limited operating history and no significant revenue stream, it is difficult to evaluate the future of our business.***

We are a bioelectric medicine technology company with no significant revenue producing operations. To date, our operations on a consolidated basis have consisted almost entirely of the continued development and clinical studies of our technologies and implementation of the early parts of our business plan. We have incurred significant operating losses in each year since our inception and we may continue to incur additional losses for the next several years. In addition, a high percentage of our expenses will continue to be fixed; accordingly, our losses may be greater than expected and our operating results may suffer. We have limited historical financial data upon which we may base our projected revenue and base our planned operating expenses. Our limited operating history makes it difficult to evaluate our technology, operations, and business prospects.

***We have not generated significant revenue, and we may never become profitable.***

To date, we have not generated significant revenue and we have historically relied on financing from the sale of equity securities and loans to fund our operations. We expect that our future financial results will depend primarily on our success in launching, selling, and supporting our therapies and procedures using our NPS technology. We expect to expend significant resources on hiring of personnel, continued scientific and product research and development, potential product testing and preclinical and clinical investigation, intellectual property development and prosecution, capital expenditures, working capital, general and administrative expenses, and fees and expenses associated with our capital raising efforts. We expect to incur costs and expenses related to consulting costs, laboratory development costs, hiring of scientists, engineers, sales representatives, and other operational personnel, and the continued development of relationships with potential partners. We are incurring significant operating losses, we expect to continue to incur additional losses for at least the next several years, and we cannot assure you that we will generate substantial revenue or be profitable in the future. There are no assurances that our future products will be cleared or approved or become commercially viable or accepted for use. Even with commercially viable applications of our technology, which may include licensing, we may never recover our research and development expenses.

Investment in medical technology is highly speculative because it entails substantial upfront capital expenditures and significant risk that any potential product will fail to demonstrate adequate efficacy or clinical utility. Investors should evaluate an investment in us in light of the uncertainties typically encountered by developing medical technology companies in a competitive environment. There can be no assurance that our efforts will be successful, either in cardiology or otherwise, or that we will ultimately be able to achieve profitability. Even if we achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable could adversely affect the market price of our common stock and could significantly impair our ability to raise capital, expand our business, or continue to implement our business plan.

***We can give no assurance that our internal and external sources of liquidity will be sufficient for our cash requirements.***

We must have sufficient sources of liquidity to fund our working capital requirements and execute on our strategic initiatives. Future new product launches or investments in other growth initiatives may demand increased working capital before any long-term return is realized from increased revenue. Our ability to achieve our business and cash flow plans is based on a number of assumptions which involve significant judgments and estimates of future performance, borrowing capacity and credit availability, and financing opportunities which cannot at all times be assured. There is no assurance that cash flows from operations and other internal and external sources of liquidity will at all times be sufficient for our cash requirements. If necessary, we may need to consider actions and steps to improve our cash position and mitigate any potential liquidity shortfall, such as modifying our business plans, pursuing additional financing to the extent available, reducing capital expenditures, suspending certain activities or programs, pursuing and evaluating other alternatives and opportunities to obtain additional sources of liquidity, and other potential actions to reduce costs. There can be no assurance that any of these actions would be successful, sufficient or available on favorable terms. Any inability to generate or obtain sufficient levels of liquidity to meet our cash requirements at the level and times needed could have a material adverse impact on our business and financial position.

***If we are unable to obtain sufficient funding, we may be unable to execute our business plan and fund operations. We may not be able to obtain additional financing on commercially reasonable terms, or at all.***

We have experienced operating losses and we expect to continue to incur operating losses for the next several years as we implement our business plan. Currently, we have no significant revenue from operations and we do not have arrangements in place for all the anticipated financing that would be required to fully implement our business plan. Our prior losses, combined with expected future losses, have had, and will continue to have, for the foreseeable future, an adverse effect on our stockholders' equity and working capital.

We will need to raise additional capital in order to continue to execute our business plan. If we are unable to raise sufficient additional funds, we may need to scale back our future operations. Also, the ongoing armed conflicts in the Middle East, Ukraine, and elsewhere, as well as increasing tariffs on international trade, which have negatively impacted the global macroeconomic environment and capital markets, may make it more difficult for us to raise additional funds.

We cannot give any assurance that we will be able to obtain all the necessary funding that we may need. In addition, we believe that we will require additional capital in the future to fully develop and bring to market our technologies and planned products. We have pursued and may pursue additional funding through various financing sources, including the private sale of our equity securities, debt financings, licensing fees for our technology, joint ventures with capital partners, and project type financing. If we raise funds by issuing equity or equity-linked securities, dilution to some or all our stockholders would result. Any equity securities issued may also provide for rights, preferences or privileges senior to those of holders of our common stock. The terms of debt securities issued or borrowings could impose significant restrictions on our operations. We also may seek government-based financing, such as development and research grants. There can be no assurance that funds will be available on commercially reasonable terms, if at all.

Any future indebtedness could impose on us restrictive covenants, including further limitations on our ability to incur additional debt, limitations on our ability to issue additional equity, limitations on our ability to acquire or license intellectual property rights, and other operating restrictions that could adversely affect our ability to conduct our business. In addition, the issuance of additional equity securities by us, or the possibility of such issuance, may cause the market price of our common stock to decline. Also, in the event that we enter into collaborations or licensing arrangements to raise capital, we may be required to accept unfavorable terms. These agreements may require that we relinquish, or license to a third party on unfavorable terms, our rights to technologies or product candidates that we otherwise would seek to develop or commercialize ourselves or reserve certain opportunities for future potential arrangements when we might otherwise be able to achieve more favorable terms. In addition, we may be forced to work with a partner on one or more of our products or market development programs, which could lower the economic value of those programs to us.

If we are unable to obtain adequate financing or financing on terms satisfactory to us when we require it, we may be required to, among other things, delay, scale back or eliminate some or all of our activities, reduce headcount, trim research and product development programs, discontinue clinical trials, stop all or some of our manufacturing operations, defer capital expenditures, deregister from being a publicly traded company and delist from Nasdaq, or license our potential products or technologies to third parties, possibly on terms that cannot sustain our current business, or curtail, suspend or discontinue our operations entirely. If any of these things were to occur, our ability to grow and support our business and to respond to market challenges could be significantly limited or we may be unable to continue operations, in which case you could lose your entire investment.

***Because our business is not profitable, from time to time, we may undergo a reduction in force to reduce our operating expenses. However, any corporate restructuring or headcount reduction may not result in anticipated savings, could result in total costs and expenses and attrition that are greater than expected and could disrupt our business.***

If we decide to reduce headcount to lower our operating expenses, we may not realize, in full or in part, the anticipated benefits, savings and improvements in our cost structure from such a restructuring because of unforeseen difficulties, delays or unexpected costs. If we are unable to realize the expected operational efficiencies and cost savings from such a restructuring, our operating results and financial condition would be adversely affected. Any restructuring activities would be disruptive to our operations and could result in material delays in our new product development programs. Also, any headcount reductions could yield unanticipated consequences, such as attrition beyond planned staff reductions, or increase difficulties in our day-to-day operations. Headcount reductions could also harm our ability to attract and retain qualified management, scientific, clinical, regulatory, manufacturing, engineering, and other personnel who are critical to our business. Any failure to attract or retain qualified personnel could prevent us from successfully developing and commercializing our new product candidates in the future.

***Our revenues and future profitability are entirely dependent upon one family of products, the CellFX System, and one platform technology, Nano-pulse Stimulation.***

Our revenue to date has been generated entirely from the CellFX System, which consists of a console, connectors and end-effectors, and these products and all our potential products under development are based upon the same patented platform technology, NPS. Our future revenue is therefore dependent on the success of these products under development and platform technology. Reliance on a single family of products and single platform technology could negatively affect our results of operations and financial condition. Our ability to become profitable will depend upon the commercial success of these future products and platform technology.

We intend to market the nsPFA Percutaneous Electrode System primarily to Otolaryngologists, Endocrine Surgeons, and Interventional Radiologists ("surgeons") who may be slow or fail to adopt our products or who may use our products in only a small percentage of their eligible patients for a variety of reasons, including but not limited to:

- lack of experience with our products;
- lack of adequate reimbursement or cost to the patient as well as lack of evidence showing procedures using our devices are reimbursable by governmental and private payers;
- lack of conviction regarding evidence supporting cost benefits or cost effectiveness of our products over existing alternatives;
- lack of clinical data showing longer-term patient benefits;
- the possible introduction of new technologies competitive to our products; and
- liability risks generally associated with the use of new products and procedures.

Moreover, our products, including our platform NPS technology, could be rendered obsolete or economically impractical by numerous factors, many of which are beyond our control, including but not limited to:

- entrance of new competitors into our markets;
- technological advancements of alternative technologies;
- loss of key relationships with suppliers, group purchasing organizations, or end-user customers;
- manufacturing or supply interruptions;
- product liability claims;
- trade tariffs;
- our reputation and product market acceptance;
- loss of existing regulatory approvals or the imposition of new requirements to maintain such approvals or to receive new approvals; and
- product recalls or safety alerts.

***We may fail to meet our publicly announced guidance or other expectations about our business and future operating results, which could cause our stock price to decline.***

The Company may, from time to time, provide financial guidance about its business and future operating results. In developing this guidance, the Company's management must make certain assumptions and judgments about its future operating performance, including but not limited to projected hiring of sales and marketing professionals, growth of revenue in the relevant device markets, increase or decrease of its market share, costs of production of its recently introduced products, and stability of the macro-economic environment in the Company's key markets. Furthermore, analysts and investors may develop and publish their own projections of the Company's business, which may form a consensus about the Company's future performance. The Company's business results may vary significantly from such guidance or that consensus due to a number of factors, many of which are outside of the Company's control, and which could adversely affect its operations and operating results. Furthermore, if the Company makes downward revisions of its own previously announced guidance, or if the Company's publicly announced guidance of future operating results fails to meet expectations of securities analysts, investors or other interested parties, the price of the Company's common stock could decline.

***Our operating results may fluctuate significantly, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations.***

Our quarterly and annual operating results may fluctuate significantly, which makes it difficult for us to predict our future operating results. These fluctuations may occur due to a variety of factors, many of which are outside of our control and may be difficult to predict, including:

- the timing and cost of, and level of investment in, research, development, and commercialization activities relating to our product and product candidates, which may change from time to time;
- the timing of receipt of approvals or clearances for our product candidates from regulatory authorities internationally or in the United States, such as the U.S. FDA;
- the timing and status of enrollment for our clinical trials;
- coverage and reimbursement policies with respect to our product and product candidates, including the degree to which procedures using our products are covered and receive adequate reimbursement from third-party payors, and potential future drugs or devices that compete with our products;
- the costs of manufacturing our products, as well as building out our supply chain, which may vary depending on the quantity of production and which will vary significantly depending upon the terms of our agreements with manufacturers;
- expenditures that we may incur to acquire, develop or commercialize additional product candidates and technologies;
- the level of demand for our product and any product candidates, if approved or cleared, which may vary significantly over time;
- litigation, including patent, employment, securities class action, stockholder derivative, general commercial, and other lawsuits;
- future accounting pronouncements or changes in our accounting policies; and
- the timing and success or failure of nonclinical studies and clinical trials for our product candidates or competing product candidates, or any other change in the competitive landscape of our industry, including consolidation among our competitors or partners.

The cumulative effects of these factors could result in large fluctuations and unpredictability in our quarterly and annual operating results. As a result, comparing our operating results on a period-to-period basis may not be meaningful. Investors should not rely on our past results as an indication of our future performance.

This variability and unpredictability could also result in our failing to meet the expectations of industry or financial analysts or investors for any period. If our revenue or operating results fall below the expectations of analysts or investors or below any forecasts we may provide to the market, or if the forecasts we provide to the market are below the expectations of analysts or investors, the price of our common stock could decline substantially. Such a stock price decline could occur even when we have met our publicly stated revenue or earnings guidance.

***Because we operate in highly competitive markets, we can expect to face competition from large well-established manufacturers of medical technologies, devices and similar products; we may not be able to compete effectively against companies with significantly more resources.***

The medical technology, medical device, biotechnology, and pharmaceutical industries are characterized by intense and dynamic competition to develop new technologies and proprietary therapies. We face competition from a number of sources, such as pharmaceutical companies, medical device companies, generic drug companies, biotechnology companies, and academic and research institutions. For example, Abbott Laboratories, AtriCure, Inc., Boston Scientific Corporation, Johnson & Johnson (Biosense Webster), Medtronic plc, and several other companies all sell ablation-based surgical and catheter-based medical devices for the treatment of heart arrhythmias, including AF, and additionally, many of these companies are also actively developing PFA products for the treatment of AF. We will find ourselves in competition with one or more of these companies, all of which may have competitive advantages over us, such as:

- significantly greater name recognition;
- established relationships with healthcare professionals, customers, and third-party payers;
- competitive products with greater efficacy or better safety profiles;
- established distribution networks;
- additional lines of products and the ability to offer rebates, higher discounts, or incentives to gain a competitive advantage;
- greater experience in obtaining patents and regulatory approvals for product candidates;
- greater experience conducting new product research and development, manufacturing therapies, conducting clinical trials, obtaining regulatory approval for products, and marketing approved products; and
- greater financial and human resources for product development, sales and marketing.

We may also face increased competition in the future as new companies enter our markets and as scientific developments surrounding electro-signaling therapeutics continue to accelerate. For example, the current standard of care in cardiac tissue ablation for the treatment of AF is the use of thermal ablation modalities, primarily the use of radiofrequency ablation but has recently seen increased use of a different type of PFA called micro-PFA. While we will seek to expand our technological capabilities to remain competitive, research and development by others may render our technology or product candidates obsolete or noncompetitive or result in treatments or cures superior to any therapy developed by us.

***We may rely on third parties for our sales, marketing, manufacturing, and/or distribution activities, and these third parties may not perform satisfactorily.***

To be able to commercialize our products and planned products, we may elect to internally develop aspects of sales, marketing, large-scale manufacturing, or distribution, or we may elect to use third parties with respect to one or more of these functions. Our reliance on these third parties may reduce our control over these functions; however, reliance on third parties does not relieve us of our responsibility to ensure compliance with all required legal, regulatory, and scientific standards. Any failure of these third parties to perform satisfactorily and in compliance with relevant laws and regulations could lead to delays in the development of our products or planned products, including delays in our clinical trials, or failure to obtain necessary regulatory approvals, or failure to successfully commercialize our products or other future products. Some of these events could be the basis for FDA or other regulatory action, including injunction, recall, seizure, or total or partial suspension of production.

We believe that developing the commercialization aspects of a company will take a substantial amount of capital and commitment of time and effort. We may seek development and marketing partners and license our technology to others in order to avoid our having to provide the marketing, manufacturing, and distribution capabilities within our organization. There can be no assurance that we will find any development and marketing partners or companies that are interested in licensing our technology. If we are unable to establish and maintain adequate sales, marketing, manufacturing, and distribution capabilities, independently or with others, we will not be able to generate product revenue and may not become profitable.

***If we lose key management personnel, our ability to identify, develop and commercialize new or next generation product candidates will be impaired, could result in loss of markets or market share and could make us less competitive.***

We are highly dependent upon the principal members of our management team, including our Chief Executive Officer, Paul LaViolette, our Chief Financial Officer, Jon Skinner, our Chief Commercial Officer, Kevin Danahy, and our Chief Technology Officer, Darrin Uecker, and members of our scientific and engineering teams. These persons have significant experience and knowledge with sub-microsecond pulsed electric fields and more broadly in life sciences and medical technologies. The loss of any team member could impair our ability to design, identify, and develop new intellectual property and new scientific or product ideas. The loss of a key employee, the failure of a key employee to perform in his or her current position, or our inability to attract and retain skilled employees could result in our inability to continue to grow our business or to implement our business strategy. We compete for qualified management and scientific personnel with other life science companies, academic institutions, and research institutions. Our employees could leave our Company with little or no prior notice. They are free to work for a competitor. If one or more of our senior executives or other key personnel were unable or unwilling to continue in their present positions, we may not be able to replace them easily or at all, and other senior management may be required to divert attention from other aspects of the business. In addition, we do not have "key person" life insurance policies covering any member of our management team or other key personnel. The loss of any of these individuals or any inability to attract or retain qualified personnel, including scientists, engineers, and others, could prevent us from pursuing collaborations and materially and adversely affect our product development and introductions, business growth prospects, results of operations, and financial condition.

***There is a limited talent pool of experienced professionals in our industry. If we are not able to retain and recruit personnel with the requisite technical skills, we may be unable to successfully execute our business strategy.***

The specialized nature of our industry results in an inherent scarcity of experienced personnel in the field. Our future success depends upon our ability to attract and retain highly skilled personnel, including scientific, technical, commercial, business, regulatory, and administrative personnel, necessary to support our anticipated growth, develop our business and perform certain contractual obligations. Given the scarcity of professionals with the scientific knowledge we require and the intense competition that exists for qualified personnel among life science businesses, we may not succeed in attracting or retaining the personnel we require to continue and grow our operations.

***We have very limited experience selling the CellFX System.***

Successfully commercializing medical devices such as ours is a complex and uncertain process. We began marketing and selling the CellFX System in the United States, Canada, and certain limited European markets in late 2021 to dermatologists through a limited direct sales force. In January 2022, we established an operating company in the Netherlands to further enhance our operations in Europe. However, in 2022 and 2023 we eliminated all of our full-time sales and marketing positions and, as of December 31, 2024, we had no international sales force and very few employees in the Unites States with sales and marketing experience. We have only just recently begun to hire employees to help market and sell our nsPFA Percutaneous Electrode System. We therefore have limited experience marketing and selling the CellFX System and our revenues and cash flows have been volatile and difficult to predict.

We intend to hire and train a very limited number of sales representatives and clinical specialists with backgrounds and experience in the relevant markets, especially those familiar with energy-based therapies and who have existing relationships with electrophysiologists, otolaryngologists, endocrine surgeons, interventional radiologists, and cardiothoracic surgeons. However, we expect that our sales force will require lead time in the field to grow their network of accounts and achieve the productivity levels we expect them to reach in any individual territory. Furthermore, the use of our product will often require or benefit from direct support from us.

Our commercialization efforts depend on the efforts of our management and sales team, our third-party manufacturers and suppliers, physicians and medical clinics, and general economic conditions, among other factors, including the following:

- the effectiveness of our marketing and sales efforts in the United States and internationally;
- our success in educating surgeons and other physicians and patients about the benefits, administration and use of our products;
- the acceptance by physicians and patients of the safety and effectiveness of our products;
- the availability, perceived advantages, relative cost, relative safety, and relative efficacy of alternative and competing therapies; and
- our ability to achieve and maintain compliance with all regulatory requirements applicable to our products.

While few in number, we expect our direct sales representatives to develop long-lasting relationships with the surgeons they serve. Our future success will depend largely on our ability to continue to hire, train, retain, and motivate skilled direct sales representatives with significant technical knowledge in various areas, such as cardiology, minimally invasive surgery, and ablation technologies. New hires require training and take time to achieve full productivity. If we fail to train new hires adequately, or if we experience high turnover in our sales force in the future, we cannot be certain that new hires will become as productive as may be necessary to maintain or increase our sales. Also, if our direct sales representatives or third-party distributors fail to adequately promote, market and sell our products or decide to leave or cease to do business with us, our sales could significantly decrease or grow at a rate too slow to become profitable. In addition, our future sales will largely depend on our ability to increase our marketing efforts and adequately address our customers' needs. If we are unable to adequately address our customers' needs, it could negatively impact sales and market acceptance of our products, and we may not generate sufficient revenue to become profitable. If we are unable to expand our sales and marketing capabilities domestically and internationally, we may not be able to effectively commercialize our products, which would adversely affect our business, results of operations, and financial condition.

***Rapidly changing technology in life sciences could make the products we are developing obsolete.***

The life sciences industries are characterized by rapid and significant technological changes, frequent new product introductions and enhancements, and evolving industry standards. Our future success will depend on our ability to continually develop and then improve the products that we design and to develop and introduce new products that address the evolving needs of our customers on a timely and cost-effective basis. Also, we will need to pursue new market opportunities that develop as a result of technological and scientific advances. These new market opportunities may be outside the scope of our proven expertise or in areas which have unproven market demand. Any new products developed by us may not be accepted in the intended markets. Our inability to gain market acceptance of new products could harm our future operating results.

***If we are unable to manage the anticipated growth of our business, our future revenue and operating results may be harmed.***

We are currently experiencing rapid growth in our business. Recent and future growth imposes significant added responsibilities on management, including the need to identify, recruit, train, and integrate additional employees. Rapid expansion in personnel could mean that fewer experienced people carry out our research and development activities, manufacture, market, and sell CellFX Systems and NPS therapies and procedures, which could result in inefficiencies and unanticipated costs, reduced quality, and disruptions to our operations. In addition, rapid and significant growth may strain our administrative and operational infrastructure, and the failure to continue to upgrade our technical, administrative, operating, and financial control systems, or the occurrence of other unexpected expansion difficulties, could have a material adverse effect on our business, financial condition and results of operations, and our ability to timely execute our business plan. We may be unable to maintain the quality of, or delivery timelines of, our products or satisfy customer demand as it grows. Our ability to manage our growth properly will require us to continue to improve our operational, financial and management controls, as well as our reporting systems and procedures. We may implement new enterprise software systems in a number of areas affecting a broad range of business processes and functional areas. The time and resources required to implement these new systems is uncertain and failure to complete this in a timely and efficient manner could harm our business. We cannot guarantee that any of the personnel, systems, procedures, and controls we put in place will be adequate to support the manufacture and distribution of our products. If we are unable to manage our growth effectively, it may be difficult for us to execute our business strategy and our business could be harmed.

***We must successfully educate and train surgeons and their staff on the proper use of the CellFX System; if our customers do not adopt our technology into their medical practices, or adopt our technology slower than expected, our business could suffer.***

Although most surgeons may have adequate knowledge on how to use our novel CellFX System based on their clinical training and experience, we believe that the most effective way to introduce and build market demand for our products is by directly training surgeons and other physicians in the use of our products. Convincing them to dedicate the time and energy necessary for adequate training is challenging, and we cannot assure you that we will succeed in these efforts. If surgeons and other physicians are not properly trained, they may not use our products and, as a result, we may not maintain or grow our sales or achieve or sustain profitability. If surgeons and other physicians are not properly trained, they may also misuse or ineffectively use our products, which may result in unsatisfactory patient outcomes, patient injury, negative publicity, or lawsuits against us, any of which could have a significant adverse effect on our business, financial condition and results of operations.

Additionally, our strategy includes educating key opinion leaders in the industry. If these key opinion leaders determine that alternative technologies are more effective or that the benefits offered by our products are not sufficient to justify their higher cost, or if we encounter difficulty promoting adoption or establishing these systems as a standard of care, our ability to achieve market acceptance of the products we introduce could be significantly limited and our business could suffer.

***We may encounter manufacturing problems or delays that could result in lost revenue or slower than anticipated product development. Additionally, we currently rely on third-party suppliers for critical components needed to manufacture the CellFX System and related applicators. Any problems experienced by these suppliers could result in a delay or interruption of their supply to us and, as a result, we may face delays in the development and commercialization of products.***

We currently rely upon third-party suppliers to manufacture and supply components for the CellFX System and for our products under development. We perform final assembly of our CellFX devices at our facility in California. The manufacture of the CellFX components in compliance with the FDA's regulations requires significant expertise and capital investment, including the development of advanced manufacturing techniques and process controls. Manufacturers of medical device products often encounter difficulties in production, including difficulties with production costs and yields, quality control, quality assurance testing, shortages of qualified personnel, as well as compliance with applicable regulations, both foreign and domestic.

We do not control the manufacturing process of, and are completely dependent on, our contract manufacturing partners for compliance with applicable regulatory requirements, and if our contract manufacturers cannot successfully manufacture the components needed for our products and products under development in a manner that conforms to our specifications and these strict regulatory requirements, we may not be able to rely on their manufacturing facilities in the future. In addition, we have limited control over the ability of our contract manufacturers to maintain adequate quality control, quality assurance and qualified personnel. If the FDA or a comparable foreign regulatory authority finds these facilities inadequate for the manufacture of our components or if such facilities are subject to enforcement action in the future or are otherwise inadequate with respect to complying with applicable regulatory requirements, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop and market our product or to obtain regulatory approval or clearance for our product candidates.

We currently purchase components for our products under purchase orders and do not have long-term contracts with most of the suppliers of these materials. If suppliers were to delay or stop producing our components, or if the prices they charge us were to increase significantly, or if they elected not to sell to us, we would need to identify other suppliers and we may not be able to secure alternative suppliers on favorable terms, or at all. Any failure of these suppliers to perform satisfactorily could adversely impact our business and results of operations and we may experience delays in manufacturing of our devices while finding another acceptable supplier.

***We may not become commercially viable if our ultimate commercialized products or related treatments fail to obtain an adequate level of reimbursement by Medicare and other third-party payers.***

We believe that the commercial viability of the CellFX System and any potential devices and products and related treatments, and therefore our commercial success as a company, may be affected by the availability of government reimbursement and medical insurance coverage and reimbursement for newly approved medical therapies, technologies, and devices. Insurance coverage and reimbursement are not assured. It typically takes a period of use in the marketplace before coverage and reimbursement are granted, if it is granted at all. In the United States and in many other jurisdictions, surgeons and other physicians and other healthcare providers generally rely on insurance coverage and reimbursement for their revenues, therefore this is an important factor in the overall commercialization plans of a proposed product and whether it will be accepted for use in the marketplace. Without insurance coverage and reimbursement for our planned products, we would expect to earn only diminished revenues, if any revenues are earned.

Medicare, Medicaid, health maintenance organizations, and other third-party payers are increasingly attempting to contain healthcare costs by limiting both the scope of coverage and the level of reimbursement of new medical technologies and products. As a result, they may not cover or provide adequate payment for the use of the CellFX System or planned products in development. In order to obtain satisfactory reimbursement arrangements, we may have to agree to reduce our fee or sales price below what we currently expect to charge customers, which could adversely affect our profit margins. Moreover, each plan may separately require us to provide scientific and clinical support for the use of our products and, as a result, the coverage determination process is often a time-consuming and costly process with no assurance that coverage and adequate reimbursement will be applied consistently or obtained at all. Even if Medicare and other third-party payers decide to cover procedures involving the CellFX System and our proposed devices and products, we cannot be certain that the reimbursement levels will be adequate. Accordingly, even if these products are approved for commercial sale, unless government and other third-party payers provide adequate coverage and reimbursement for our devices and products, some surgeons and other physicians may be discouraged from using them, and our sales would suffer.

Medicare reimburses for medical technologies and products in a variety of ways, depending on where and how the item is used. However, Medicare only provides reimbursement if CMS determines that the item should be covered and that the use of the device or product is consistent with the coverage criteria. A coverage determination can be made at the local level by the Medicare administrative contractor, a private contractor that processes and pays claims on behalf of CMS for the geographic area where the services were rendered, or at the national level by CMS through a national coverage determination. There are statutory provisions intended to facilitate coverage determinations for new technologies, but it is unclear how these provisions might apply to the CellFX System or to any of our proposed devices and products, as they are still largely in the development stages. Coverage presupposes that the technology, device, or product has been cleared or approved by the FDA and further, that the coverage will be consistent with the approved intended uses of the device or product as approved or cleared by the FDA, but coverage can be narrower. A coverage determination may be so limited that relatively few patients will qualify for a covered use of a device or product.

Obtaining a coverage determination, whether local or national, is a time-consuming, expensive and highly uncertain proposition, especially for a new technology, and inconsistent local determinations are possible. On average, Medicare coverage determinations for medical devices and products lag behind FDA approval or clearance. The Medicare statutory framework is also subject to administrative rulings, interpretations and discretion that affect the amount and timing of reimbursement made under Medicare. Medicaid coverage determinations and reimbursement levels are determined on a state-by-state basis, because Medicaid, unlike Medicare, is administered by the states under a state plan filed with the Secretary of the U.S. Department of Health and Human Services ("HHS"). Medicaid generally reimburses at lower levels than Medicare. Moreover, Medicaid programs and private insurers are frequently influenced by Medicare coverage determinations.

***Our ability to utilize our net operating loss carryforwards and certain other tax attributes may be limited.***

We have incurred net losses since our inception and anticipate that we may continue to incur significant losses for the foreseeable future. If not utilized, some of our federal and state net operating losses ("NOLs") carryforwards will begin to expire in various years beginning after 2034. Under the Internal Revenue Code of 1986, as amended, or the Code, and certain similar state tax provisions, we are generally allowed to carry forward our NOLs from a prior taxable year to offset our future taxable income, if any, until such NOLs are used or expire, subject to certain limitations. The same is true of other unused tax attributes, such as tax credits.

In addition, under Section 382 of the Code, a corporation that undergoes an "ownership change" is subject to limitations on its ability to utilize its pre-change NOLs to offset future taxable income. We believe that we have had one or more ownership changes prior to 2018, but recently performed a Section 382 study to analyze fiscal years 2018 through 2024, and we do not believe that we have had any additional ownership changes over that period. Possible future changes in our stock ownership could result in limitations.

***We have a substantial amount of goodwill and intangible assets which over time may have to be written down as we make the required periodic assessments as to their value as reflected in our financial statements.***

A portion of our total assets are comprised of goodwill and intangibles that arose from our 2014 business acquisitions. We review goodwill for impairment at least annually or whenever changes in circumstances indicate that the carrying value of the goodwill may not be recoverable. We also review our intangible assets for impairment at each fiscal year end or when events or changes in circumstances indicate the carrying value of these assets may exceed their current fair values. If we take an impairment charge for either goodwill or intangible assets, the overall assets will be reduced. Such an impairment charge may result in a change in the perceived value of the Company and ultimately may be reflected as a reduction in the market price of our securities. Additionally, an impairment charge may also adversely influence our ability to raise capital in the future.

**Risks Related to Product Development and Product-Related Risks**

***Our CellFX System and any future product candidates may cause serious adverse side effects or have other properties that could delay or prevent their regulatory approval, limit their commercial desirability or result in significant negative consequences.***

The risk of failure of clinical development is high. For example, the vast majority of our in vivo data has been a result of animal testing outside of cardiac animal models, and we have only completed a limited number of feasibility studies in humans. Undesirable side effects caused by the CellFX System, NPS pulses, or any of our planned future products could cause us, any partners of ours, or regulatory authorities to interrupt, delay or halt clinical trials or to revoke previously granted regulatory approvals. Undesirable side effects could also result in more restrictive labeling requirements or the delay or denial of regulatory approval of planned future products by the FDA or other comparable foreign regulatory authority.

Additionally, if we or others identify undesirable side effects caused by the CellFX System, a number of potentially significant negative consequences could result, including:

- we may be forced to recall such product and suspend the marketing of such product;
- regulatory authorities may withdraw their approvals of such product;
- regulatory authorities may require additional warnings on the label and/or narrow the indication of use for the product which could diminish the usage or otherwise limit the commercial success of such product;
- the FDA or other regulatory authorities may issue safety alerts, "Dear Healthcare Provider" letters, press releases, or other communications containing warnings about such product;
- the FDA may restrict distribution of our product and impose burdensome implementation requirements on us;
- we may be required to change the way the product is administered or conduct additional clinical trials;
- we could be sued and held liable for harm caused to subjects or patients; and
- our reputation could suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of the CellFX System or of any future particular planned product, if approved.

***Clinical development involves a lengthy and expensive process with an uncertain outcome, and results of earlier studies and trials may not be predictive of future trial results.***

Clinical testing is expensive and can take many years to complete, and its outcome is inherently uncertain. Failure or delay can occur at any time during the clinical trial process. For example, success in nonclinical studies and early feasibility clinical studies does not ensure that the expanded clinical trials needed to support regulatory submissions will be successful. Setbacks can be caused by, among other things, nonclinical findings made while clinical trials are underway, safety or efficacy observations made in clinical trials, including previously unreported adverse events, or post-approval observations. Even if our clinical trials are completed, the results may not be sufficient to obtain regulatory approval or clearance for our product candidates or to expand the existing approvals or clearances for our existing products. To date, we have had only preclinical experience using NPS technology in animal models of cardiac disease and very limited clinical experience treating AF with our nsPFA 360° Cardiac Catheter and our nPFA Cardiac Surgery Clamp; our past successes in dermatology may not translate into similar results in cardiology or in any other medical field. In particular, the safety and efficacy data we have generated using NPS technology and the CellFX System to treat benign lesions in the skin and benign thyroid nodules might not be replicated in other areas of medicine, including the use of nsPFA technology and the CellFX System to treat AF or other cardiac disease.

***Our long-term growth depends on our ability to develop marketable products to treat AF, tumors and nodules through our research and development efforts, and if we fail to do so we may be unable to compete effectively or we may decide to scale back or eliminate some or all of our activities or otherwise curtail, suspend or discontinue our operations entirely.***

The medical device industry is characterized by intense competition, rapid technological changes, new product introductions and enhancements, and evolving industry standards. Our business prospects depend in part on our ability to develop new products and applications for our NPS technology, including in new markets that develop as a result of technological and scientific advances. New technologies, techniques or products could emerge that might offer better combinations of price and performance than our products. It is important that we anticipate changes in technology and market demand, as well as physician, hospital, and healthcare provider practices to successfully develop, obtain clearance or approval, if required, and successfully introduce new, enhanced and competitive technologies to meet our prospective customers' needs on a timely and cost-effective basis.

If we do not develop and obtain regulatory clearances or approvals for new products or product enhancements in time to meet market demand, or if there is insufficient demand for these products or enhancements, our results of operations will suffer. Our research and development efforts may require a substantial investment of time and resources before we are adequately able to determine the commercial viability of a new product, technology, material, or other innovation. In addition, even if we are able to develop enhancements or new generations of our products successfully, these enhancements or new generations of products may not produce sales in excess of the costs of development and they may be quickly rendered obsolete by changing customer preferences or the introduction by our competitors of products embodying new technologies or features.

Moreover, if our technology cannot be used to successfully treat AF, tumors and nodules, we may decide to, among other things, delay, scale back or eliminate some or all of our activities, reduce headcount, trim research and product development programs, discontinue clinical trials, stop all or some of our manufacturing operations, defer capital expenditures, deregister from being a publicly traded company and delist from Nasdaq, or license our potential products or technologies to third parties, possibly on terms that cannot sustain our current business, or curtail, suspend or discontinue our operations entirely.

***Interim "top-line" and preliminary results from our clinical trials that we announce or publish from time to time may change as more patient data become available and are subject to audit and verification procedures that could result in material changes in the final data.***

From time to time, we may publish interim top-line or preliminary results from our clinical trials. Interim results from clinical trials that we may announce are subject to the risk that one or more of the clinical outcomes may materially change as more follow-up data are gathered, patient enrollment continues and more patient data become available. Preliminary or top-line results, including our preliminary data from our feasibility thyroid nodule study and our first-in-human cardiac catheter study, also remain subject to audit and verification procedures that may result in the final data being materially different from the preliminary data we previously published or announced. As a result, interim and preliminary data should be viewed with caution until the final data are available. Differences between preliminary or interim data and final data could significantly harm our business prospects and may cause the trading price of our common stock to fluctuate significantly.

***If we fail to maintain necessary regulatory clearance for our products, or if clearances or approvals for future devices and indications are delayed or not issued, the commercial prospects for our CellFX System and other NPS technologies would be harmed.***

Our product candidates under development are medical devices that are subject to extensive regulation by the FDA in the United States and by regulatory agencies in other countries where we do business. Government regulations specific to medical devices are wide-ranging and govern, among other things:

- device design, development and manufacture;
- laboratory, preclinical and clinical testing, labeling, packaging, and storage;
- premarketing clearance or approval;
- record keeping;
- device marketing, promotion and advertising, sales and distribution; and
- post-marketing surveillance, including reporting of deaths and serious injuries and recalls and correction and removals.

Before a new medical device, or a new intended use for an existing device, can be marketed in the United States, the device's manufacturer must first submit and receive either 510(k) clearance or Premarket Approval ("PMA") from the FDA, unless an exemption applies. In the 510(k)-clearance process, the FDA will determine that a proposed device is "substantially equivalent" to a device legally on the market, known as a "predicate" device, with respect to intended use, technology and safety and effectiveness, in order to clear the proposed device for marketing. Clinical data is sometimes required to support substantial equivalence. The PMA pathway requires an applicant to demonstrate reasonable safety and effectiveness of the device based on extensive data, including, but not limited to, technical, preclinical, clinical trial, manufacturing, and labeling data. The PMA process is typically required for devices that are deemed to pose the greatest risk, such as life-sustaining, life-supporting, or implantable devices. Products that are approved through a PMA application generally need FDA approval before they can be modified. Similarly, some modifications made to products cleared through a 510(k) may require a new 510(k). Either process can be expensive, lengthy and unpredictable.

The FDA may not approve or clear our 510(k), de novo, or PMA applications on a timely basis or at all. Such delays or refusals could have a material adverse effect on our business operations and financial condition. The FDA may also change its clearance and approval policies, adopt additional regulations or revise existing regulations, or take other action which may prevent or delay approval or clearance of our products under development. Any of these actions could have a material adverse effect on our business operations and financial condition.

The FDA and the U.S. Federal Trade Commission ("FTC") also regulate the advertising and promotion of our devices to ensure that the claims we make are consistent with our regulatory clearances or approvals, that there are adequate and reasonable data to substantiate the claims and that our promotional labeling and advertising is neither false nor misleading in any respect. If the FDA or the FTC determines that any of our advertising or promotional claims are misleading, not substantiated or not permissible, we may be subject to enforcement actions, including FDA warning letters, and we may be required to revise our promotional claims and make other corrections or restitutions.

FDA and state authorities have broad enforcement powers. Our failure to comply with applicable regulatory requirements could result in enforcement action by the FDA or state agencies, which may include any of the following sanctions, among others:

- adverse publicity, warning letters, fines, injunctions, consent decrees, and civil penalties;
- obligations to repair, replace, refund, or recall our marketed devices, or government seizure of them;
- operating restrictions, partial suspension, or total shutdown of production;
- refusing our requests for 510(k) clearance or premarket approval of new devices, new intended uses or modifications to existing devices;
- withdrawing 510(k) clearance or premarket approvals that have already been granted; and
- criminal prosecution.

If any of these events were to occur, our business and financial condition would be harmed.

***The mechanism of action of NPS technology platform has not been fully determined or validated.***

The exact mechanism(s) of action(s) of our NPS technology platform, including nsPFA, is not fully understood, and data are still being gathered regarding its use. Furthermore, there are only a relatively small number of scientists and researchers who can be considered experts in the use of this emerging technology. Insofar as potential regulators, partners or investors value a clear understanding of a technology's mechanism of action, this limitation could make it more challenging for us to obtain requisite regulatory approvals, investments or a partnership on favorable terms as a result.

***We may find it difficult to enroll patients in our clinical trials. If we cannot enroll a sufficient number of eligible patients to participate in our clinical trials, we may not be able to initiate or continue them, which could delay or prevent development of our product candidates.***

Identifying and qualifying patients to participate in clinical trials of our product candidates is critical to our success. The timing of our clinical trials depends on the speed at which we can recruit patients to participate in testing our product candidates as well as completion of required follow-up periods. In general, if patients are unwilling to participate in our trials because of negative publicity from adverse events in the health care industry or for other reasons, including competitive clinical trials for similar patient populations, the timeline for recruiting patients, conducting trials and obtaining regulatory approval or clearance of planned products may be delayed. If there are delays in accumulating the required patients and patient data, there may be delays in completing the trial. Further, if any of our clinical trial sites fail to comply with required good clinical practices, we may be unable to use the data gathered at those sites. Also, if our clinical investigators fail to carry out their contractual duties or regulatory obligations or fail to meet expected deadlines, or if the quality or accuracy of the clinical data they obtain is compromised due to their failure to adhere to our clinical protocols or for other reasons, our clinical trials may be delayed, suspended, or terminated. These delays could result in increased costs, delays in advancing our product development, delays in testing the effectiveness of our technology or termination of the clinical trials altogether, and delays in obtaining regulatory authorization for our products.

***Laboratory conditions differ from commercial conditions and field conditions, and the safety and effectiveness of our product candidates may depend on the technique of the user.***

Observations and developments that may be achievable under laboratory circumstances may not be able to be replicated in broader research and development phases, in commercial settings, or in the use of any of any product or product candidates in the field. Furthermore, our NPS technologies will be administered by healthcare professionals and will require a degree of training and practice to administer correctly. Treatment results achieved in the laboratory or in clinical trials conducted by us or by other investigators may not be representative of the results actually encountered during commercial use of our products due to variability in administration technique. The training and skills of investigators in our clinical trials may not be representative of the training and skills of future product users, which could negatively affect treatment results and the reputation of the Company or its products. In addition, there may be a selection bias in the patients and/or sites of administration chosen for any clinical trials that would positively affect treatment results that may not be representative or predictive of real-world experience with our products, including the CellFX System.

***Issues with our firmware and software may negatively affect the function of our devices.***

The safety and effectiveness of CellFX procedures and therapies may depend, in part, on the function of firmware run by the microprocessors embedded in the device and associated software. This firmware and software is proprietary to us. While we have made efforts to test the firmware and software extensively, both are potentially subject to malfunction which in turn may harm patients. Further, our proprietary firmware and software may be vulnerable to physical break-ins, hackers, improper employee or contractor access, computer viruses, programming errors, data breaches, or similar problems. Any of these might result in harm to patients or the unauthorized release of confidential medical, business or other information belonging to us or to other persons.

**Risks Related to Intellectual Property, Cybersecurity, Data Privacy, & Litigation**

***If we are unable to protect our intellectual property, then our financial condition, results of operations and the value of our technology and products could be adversely affected.***

Patents and other proprietary rights are essential to our business and our ability to compete effectively with other companies is dependent upon the proprietary nature of our technologies. Similarly, our future success partnering our NPS technologies, including our CellFX System, will depend greatly on the perceived strength and reach of the patents protecting those technologies against unlicensed competitors. We also rely upon trade secrets, know-how, continuing technological innovations, and licensing opportunities to develop, maintain and strengthen our competitive position. We seek to protect these, in part, through confidentiality agreements with certain employees, consultants and other parties. Our success will depend in part on the ability of our licensors and us to obtain, to maintain (including making periodic filings and payments) and to enforce patent protection for the licensed intellectual property, in particular, those patents to which we have secured rights. We may not successfully prosecute or continue to prosecute the patent applications which we have licensed. Even if patents are issued in respect of these patent applications, we may fail to maintain these patents or may determine not to pursue litigation against entities that are infringing upon these patents. Without adequate protection for the intellectual property that we own or license, other companies might be able to offer substantially identical products for sale, which could unfavorably affect our competitive business position and harm our business prospects. Even if issued, patents may be challenged, invalidated, or circumvented, which could limit our ability to stop competitors from marketing similar products or limit the length of term of patent protection that we may have for our products.

***Litigation or third-party claims of intellectual property infringement or challenges to the validity of our patents would require us to use resources to protect our technology and may prevent or delay our development, regulatory approval or commercialization of our product candidates.***

If we are the target of claims by any third party asserting that our products or intellectual property infringe upon the rights of others, we may be forced to incur substantial expenses or divert substantial employee resources from our business. If successful, such claims could result in our having to pay substantial damages or could prevent us from developing one or more products or product candidates. Further, if a patent infringement suit were brought against us or our collaborators, we or they could be forced to stop or delay research, development, manufacturing, or sales of the product or product candidate that is the subject of the suit.

If we, or our collaborators, experience patent infringement claims, or if we elect to avoid potential claims others may be able to assert, we or our collaborators may choose to seek, or be required to seek, a license from the third party and would most likely be required to pay license fees or royalties or both. These licenses may not be available on acceptable terms, or at all. Even if we or our collaborators were able to obtain a license, the rights may be nonexclusive, which would give our competitors access to the same intellectual property. Ultimately, we could be prevented from commercializing a product, or be forced to cease some aspect of our business operations if, as a result of actual or threatened patent infringement claims, we or our collaborators are unable to enter into licenses on acceptable terms. This could harm our business significantly. The cost to us of any litigation or other proceeding, regardless of its merit, even if resolved in our favor, could be substantial. Some of our competitors may be able to bear the costs of such litigation or proceedings more effectively than we can because of their having greater financial resources. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could have a material adverse effect on our ability to compete in the marketplace. Intellectual property litigation and other proceedings may, regardless of their merit, also absorb significant management time and employee resources.

***Our intellectual property rights will not necessarily provide us with competitive advantages.***

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations, and may not adequately protect our business, or permit us or our future commercial partners to maintain a competitive advantage. The following examples are illustrative:

- others may be able to make products that are similar to our product candidates but that are not covered by the claims of the patents that we own or have exclusively licensed;
- others may independently develop similar or alternative technologies without infringing on our intellectual property rights;
- issued patents that we own or have exclusively licensed may not provide us with any competitive advantages, or may be held invalid or unenforceable, as a result of legal challenges by our competitors;
- we may obtain patents for certain products many years before we obtain marketing approval for products utilizing such patents, and because patents have a limited life, which may begin to run prior to the commercial sale of the related product, the commercial value of our patents may be limited;
- our competitors might conduct research and development activities in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets;
- we may fail to develop additional proprietary technologies that are patentable;
- the laws of certain foreign countries may not protect our intellectual property rights to the same extent as the laws of the United States, or we may fail to apply for or obtain adequate intellectual property protection in all the jurisdictions in which we operate; and
- the patents of others may have an adverse effect on our business, for example by preventing us from marketing one or more of our product candidates for one or more indications.

Any of the aforementioned threats to our competitive advantage could harm our business.

***If we are unable to protect the confidentiality of our proprietary information and know-how, the value of our technology and products could be adversely affected.***

In addition to patented technology, we rely upon, among other things, unpatented proprietary technology, processes, trade secrets, and know-how. Any involuntary disclosure to, or misappropriation by, third parties of our confidential or proprietary information could enable competitors to duplicate or surpass our technological achievements, potentially eroding our competitive position in our market. We seek to protect confidential and proprietary information in part by confidentiality agreements with our employees, consultants and third parties. While we require, as a matter of company policy, that all of our employees, consultants, advisors, and any third parties who have access to our proprietary know-how, information or technology to enter into confidentiality agreements, we cannot be certain that this know-how, information and technology will not be improperly disclosed or that competitors will not otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. These confidentiality agreements may be terminated or breached, and we may not have adequate remedies for any such termination or breach. Furthermore, these agreements may not provide meaningful protection for our trade secrets and know-how in the event of unauthorized use or disclosure.

***If we are unable to protect the intellectual property used in our products, others may be able to copy our innovations which may impair our ability to compete effectively in our markets.***

Evaluating the strength and enforceability of our patents involves complex legal and scientific questions and can be uncertain. Both our patents and patent applications can be challenged by third parties and our patent applications may fail to result in issued patents. Moreover, both our existing and future patents may be too narrow to prevent third parties from developing or designing around our intellectual property and, in that event, we may lose competitive advantage and our business may suffer.

***We may not be able to protect our intellectual property rights throughout the world.***

Filing, prosecuting and defending patents on product candidates in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States can be less extensive than those in the United States. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and further, may export otherwise infringing products to territories where we have patent protection, but enforcement is not as strong as that in the United States. These products may compete with our current or future product candidates, if any, and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

***If our information technology systems or data, or those of third parties upon whom we rely, are or were compromised, we could experience adverse consequences resulting from such compromise, including, but not limited to, regulatory investigations and actions; litigation (including class claims); fines and penalties; a disruption of our business operations such as our clinical trials; reputational harm; loss of revenue and profits; and other adverse consequences.***

We depend on our information technology systems for the efficient functioning of our business, including the manufacture, distribution and maintenance of our products, as well as for accounting, data storage, compliance, purchasing, inventory management, and other related functions. We do not have redundant information technology in all aspects of our systems at this time. Despite the implementation of security and back-up measures, our information technology systems as well as those of our third-party partners, consultants, contractors, suppliers, and service providers, may be vulnerable to attack, damage and interruption from physical or electronic break-ins, accidental or intentional exposure of our data by employees or others with authorized access to our networks, computer viruses, malware, ransomware, malicious code, phishing attacks and other social engineering schemes, denial or degradation of service attacks, attacks by sophisticated nation-state and nation-state-supported actors, supply chain attacks, natural disasters, terrorism, war, telecommunication and electrical failure, denial of service, and other cyberattacks or disruptive incidents that could result in unauthorized access to, use or disclosure of, corruption of, or loss of sensitive, and/or proprietary data, including health-related and other personal information.

In the ordinary course of our business, we (and third parties upon whom we rely) may collect, receive, store, use, transfer, make accessible, protect, secure, dispose of, transmit, disclose or otherwise process proprietary, confidential and sensitive information, including personal data, such as health-related data and participant study related data, intellectual property, and trade secrets (collectively, "sensitive data"). We may share or receive sensitive data with or from third parties whose information security measures may not be adequate. In particular, the COVID-19 pandemic caused us to modify our information technology practices including that our employees may work remotely which increases the risk of data breaches. Additionally, the prevalent use of mobile devices that access our sensitive data increases the risk of data breaches.

While we do not believe that we have experienced any significant system failure, accident or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our business operations, whether due to a loss, corruption or unauthorized disclosure of our trade secrets, personal information or other proprietary or sensitive information or other similar disruptions. The costs to us to attempt to protect against such breaches can be significant and could potentially require us to modify our business, including non-clinical and clinical trial activities. While we have implemented security measures designed to protect our information technology systems and to identify and remediate potential vulnerabilities, such measures may not be successful. We may not be able to detect vulnerabilities in our information technology systems because such threats and techniques used by threat actors change frequently are sophisticated in nature and may not be detected until after a security incident has occurred.

If we, or others upon whom we rely, experience or are perceived to have experienced a breach, we may experience adverse consequences. These consequences may include: government enforcement actions (for example, investigations, fines, penalties, audits and inspections), interruptions in our operations (including disruptions to our clinical trials), interruptions or restrictions on processing sensitive data (which could result in delays in obtaining, or our inability to obtain, regulatory approvals and significantly increase our costs to recover or reproduce the sensitive data), unauthorized, unlawful or accidental loss, corruption, access, modification, destruction, alteration, acquisition or disclosure of sensitive data, such as clinical trial data, reputational harm, litigation (including class-action claims), indemnification obligations, monetary fund diversions, financial loss and other harms. In particular, ransomware attacks are becoming increasingly prevalent and severe and can lead to significant disruptions to operations, loss of data and income, reputational harm and diversion of funds. Additionally, theft of our intellectual property or proprietary business information could require substantial expenditures to remedy. Such theft could also lead to loss of intellectual property rights through disclosure of our proprietary business information, and such loss may not be capable of remedying. In addition, such a breach may require notification of the breach to relevant stakeholders. Such disclosures are costly and the disclosure or the failure to comply with such requirements could lead to adverse consequences. We maintain cyber liability insurance; however, this insurance may not be sufficient to cover the financial, legal, business or reputational losses that may result from an interruption or breach of our systems.

***Product liability lawsuits against us could cause us to incur substantial liabilities and limit commercialization of our product or any future products that we may develop.***

We face an inherent risk of product liability exposure related to the sale of our product and the future sale of planned products and the use of these in human clinical studies. For example, we may be sued if our product or any of our product candidates, including any that are developed in combination therapies, allegedly causes injury, or is found to be otherwise unsuitable during product testing, manufacturing, marketing, or sale. Any such product liability claims may include allegations of defects in manufacturing, defects in design, a failure to warn of dangers inherent in the product, negligence, strict liability, or a breach of warranties. We may also be subject to liability for a misunderstanding of, or inappropriate reliance upon, the information we provide. If we cannot successfully defend ourselves against claims that our product or planned products caused injuries, we may incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in, among other things:

- decreased demand for our product or any planned products that we may develop;
- injury to our reputation and significant negative media attention;
- withdrawal of patients from our clinical studies or cancellation of studies;
- significant costs to defend the related litigation and distraction to our management team;
- substantial monetary awards to patients;
- loss of revenue;
- government investigations or enforcement actions; and
- the inability to commercialize any future products that we may develop.

For example, during the course of treatment, patients may suffer adverse events for reasons that may or may not be related to the CellFX System or our NPS technology. Such events could subject us to costly litigation, require us to pay substantial amounts of money to injured patients, delay, negatively impact, or end our opportunity to receive or maintain regulatory approval to market those products, or require us to suspend or abandon our commercialization efforts. Even if we do not believe that an adverse event is related to our product, the investigation into the circumstance may be time consuming or inconclusive. These investigations may interrupt our sales efforts, delay our regulatory approval processes, or impact and limit the type of regulatory approvals our products could receive or maintain. As a result of these factors, a product liability claim, even if successfully defended, could harm our business.

We currently maintain product liability insurance coverage, which may not be adequate to cover all liabilities that we may incur. Insurance coverage is increasingly expensive. We may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise.

**Risks Related to Government Regulation**

***We are subject to stringent domestic and foreign regulation. Any unfavorable regulatory action or adverse change in law may materially and adversely affect our future financial condition and business operations and prospects.***

The CellFX System and any other potential devices and products we develop are, and will continue to be, subject to extensive, rigorous, and ongoing regulation by numerous government agencies, including the FDA and similar foreign regulatory authorities. To varying degrees, each of these agencies monitors and enforces our compliance with laws and regulations governing the development, testing, manufacturing, labeling, marketing, distribution, and the safety and effectiveness of our medical technology. The process of obtaining and maintaining marketing approval or clearance from the FDA and similar foreign regulatory authorities for new devices and products, or for enhancements, expansion of the indications or modifications to existing products, could:

- take a significant indeterminate amount of time;
- require the expenditure of substantial resources;
- involve rigorous preclinical and clinical testing, and possibly post-market surveillance;
- involve modifications, repairs or replacements of our products;
- require design changes of our products;
- result in limitations on the indicated uses of our products; and
- result in our never being granted the regulatory approval or clearance we seek.

If we experience any of these occurrences, our operations may suffer and we might experience harm to our competitive standing, which could adversely affect our financial condition.

We are subject to, and will have ongoing responsibilities under, FDA and international regulations, both before and after a product is approved or cleared and commercially released. Compliance with applicable regulatory requirements is subject to continual review and is monitored rigorously through periodic inspections. If an inspection were to conclude that we are not in compliance with applicable laws or regulations, or that any of our devices are ineffective or pose an unreasonable health risk, the FDA or similar foreign regulatory authorities could ban such devices or products, detain or seize such devices or products, order a recall, repair, replacement, or refund of such devices or products, or require us to notify health professionals and others that the therapies, devices or products present unreasonable risks of substantial harm to the public health. Additionally, the FDA or similar foreign regulatory authorities may impose other operating restrictions, enjoin and restrain certain violations of applicable law pertaining to our devices and products or assess civil or criminal penalties against our officers, employees, or us. The FDA and similar foreign regulatory authorities have been increasing their scrutiny of the industry and governments are expected to continue to scrutinize the industry closely with inspections and possibly enforcement actions. Any adverse regulatory action, depending on its magnitude, may restrict us from effectively manufacturing, marketing and selling our devices and products, including the CellFX System. In addition, negative publicity and product liability claims resulting from any adverse regulatory action could have a material adverse effect on our financial condition and results of operations.

Changes in healthcare policy could increase our costs, decrease our revenues, and impact sales of, and reimbursement for, our current and future products. For example, the Affordable Care Act substantially changed the way healthcare is financed by both governmental and private insurers, and significantly impacted our industry. There will continue to be proposals by legislators at both the federal and state levels, regulators, and third-party payors to reduce costs while expanding individual healthcare benefits. Certain of these changes could impose additional limitations on the prices we will be able to charge for our current and future products or the amounts of reimbursement available for our current and future products from governmental agencies or third-party payors.

***Disruptions in the FDA and other government agencies caused by funding shortages or global health concerns could hinder their ability to hire and retain key leadership and other personnel or otherwise prevent new product candidates and services from being developed or commercialized in a timely manner, which could negatively impact our business.***

The ability of the FDA to review and approve new products can be affected by a variety of factors, including government budget and funding levels, ability to hire and retain key personnel and accept the payment of user fees, and statutory, regulatory, and policy changes and other events that may otherwise affect the FDA's ability to perform routine functions. Average review times at the agency have fluctuated in recent years as a result. In addition, government funding of other government agencies, including those that fund research and development activities, is subject to the political process, which is inherently fluid and unpredictable.

Disruptions at the FDA and other agencies may also slow the time necessary for new product candidates to be reviewed or approved by necessary government agencies, which would adversely affect our business. For example, over the last several years, the U.S. government has shut down several times and certain regulatory agencies, such as the FDA, have had to furlough critical employees and stop critical activities. If a prolonged government shutdown occurs, it could significantly impact the ability of the FDA to timely review and process our regulatory submissions, which could have a material adverse effect on our business.

In addition, disruptions may result from events similar to the COVID-19 pandemic. During the COVID-19 pandemic, a number of companies announced receipt of complete response letters due to the FDA's inability to complete required inspections for their applications. In the event of a similar public health emergency in the future, the FDA may not be able to continue its current pace and review timelines could be extended. Regulatory authorities outside the United States facing similar circumstances may adopt similar restrictions or other policy measures in response to a similar public health emergency and may also experience delays in their regulatory activities.

Further, given changes to the U.S. government's policies and priorities since the new administration entered office in January 2025, there is substantial uncertainty as to how, if at all, the new administration will seek to modify or revise the requirements and policies of the FDA and other regulatory agencies with jurisdiction over our product candidates. There is also uncertainty as to how other measures being implemented by the current administration across the government will impact our activities and those of the FDA and its operations. For example, the potential loss of FDA personnel could lead to further disruptions and delays in FDA review of our product candidates and FDA guidance regarding our or our collaborators' clinical development programs. Similarly, efforts by the new administration to substantially reduce research funding by the National Institutes of Health of medical research could have substantial indirect impacts on our research activities.

Accordingly, if a prolonged government shutdown or other disruption occurs, it could significantly impact the ability of the FDA to timely review and process our regulatory submissions, which could have a material adverse effect on our business. Future shutdowns or other disruptions could also affect other government agencies such as the SEC, which may also impact our business by delaying review of our public filings, to the extent such review is necessary, and

our ability to access the public markets.

***All our product development depends upon maintaining strong working relationships with physicians.***

The development, marketing, and sale of any future products in development depends upon our ability to maintain strong working relationships with physicians. We rely on these professionals to provide us with considerable knowledge and experience regarding the development, marketing, and sale of our products. Physicians assist us in clinical trials and as researchers, marketing and product consultants and public speakers. If we cannot maintain our strong working relationships with these professionals and continue to receive their advice and input, the development and marketing of our products could suffer, which could harm our business, financial condition and results of operations. The medical device industry's relationship with physicians is under increasing scrutiny by the Office of Inspector General ("OIG"), the Department of Justice ("DOJ"), state attorneys general, and other foreign and domestic government agencies. Our failure to comply with laws, rules and regulations governing our relationships with physicians, or an investigation into our compliance by the OIG, DOJ, state attorneys general, and other government agencies, could significantly harm our business, including compromising the use or integrity of our clinical data in regulatory submissions to the FDA or similar regulatory authorities.

***We are subject to healthcare and other laws and regulations relating to our business and could face substantial penalties if we are determined not to have fully complied with such laws, which could have an adverse impact on our business.***

We are exposed to the risk that our employees and independent contractors, including principal investigators, consultants, any commercial collaborators, service providers and other vendors may engage in misconduct or other illegal activity. Misconduct by these parties could include intentional, reckless and/or negligent conduct or other unauthorized activities that violate applicable laws or regulations. There are many federal and state laws and regulations prohibiting fraud and abuse in the healthcare industry that can result in significant criminal and civil penalties. These laws may constrain the business or financial arrangements and relationships through which we conduct our operations, including how we research, market, sell, and distribute our products for which we obtain marketing approval or clearance.

We are exposed to the risk that our employees and independent contractors, including principal investigators, consultants, any commercial collaborators, service providers and other vendors may engage in misconduct or other illegal activity. Misconduct by these parties could include intentional, reckless and/or negligent conduct or other unauthorized activities that violate applicable laws or regulations. There are many federal and state laws and regulations prohibiting fraud and abuse in the healthcare industry that can result in significant criminal and civil penalties. These laws may constrain the business or financial arrangements and relationships through which we conduct our operations, including how we research, market, sell, and distribute our products for which we obtain marketing approval or clearance. Such laws include:

- U.S. federal Anti-Kickback Statute, which prohibits, among other things, persons and entities from knowingly and willfully soliciting, offering, receiving, or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made under a federal healthcare program, such as Medicare and Medicaid. The term "remuneration" has been broadly interpreted to include anything of value, and the government can find a violation of the Anti-Kickback Statute without proving that a person or entity had actual knowledge of the law or a specific intent to violate it. In addition, the government may assert that a claim including items or services resulting from a violation of the U.S. federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the civil False Claims Act;

- U.S. federal civil and criminal false claims laws and civil monetary penalties laws, including the civil False Claims Act, which, among other things, impose criminal and civil penalties, including through civil whistleblower or qui tam actions, against individuals or entities for knowingly presenting, or causing to be presented, to the U.S. government, claims for payment or approval that are false or fraudulent, knowingly making, using or causing to be made or used, a false record or statement material to a false or fraudulent claim, or from knowingly making a false statement to avoid, decrease or conceal an obligation to pay money to the U.S. government;

- HIPAA imposes criminal and civil liability for, among other things, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, or knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false statement, in connection with the delivery of, or payment for, healthcare benefits, items or services. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;

- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act ("HITECH"), and its implementing regulations, also imposes obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information without appropriate authorization by covered entities subject to the rule, such as health plans, healthcare clearinghouses and healthcare providers as well as their business associates that perform certain services for or on their behalf involving the use or disclosure of individually identifiable health information;

- the U.S. Physician Payments Sunshine Act, which requires certain manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program (with certain exceptions) to report annually to the government information related to payments or other "transfers of value" made to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, and requires applicable manufacturers and group purchasing organizations to report annually to the government ownership and investment interests held by these physicians and their immediate family members;

- the California Consumer Privacy Act ("CCPA") requires covered companies to, among other things provide new disclosures to California consumers and afford such consumers new abilities to opt-out of certain sales of personal information. We cannot yet predict the impact of the CCPA or the recently approved California Privacy Rights Act ("CPRA") on our business or operations, but it may require us to modify our data processing practices and policies and could cause us to incur substantial costs and expenses in an effort to comply;

- federal consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm consumers; and

- analogous state and non-U.S. laws and regulations, such as state anti-kickback and false claims laws, which may apply to our business practices, including, but not limited to, research, distribution, sales, and marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers; state laws that require device companies to comply with the industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the U.S. government, or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state laws and regulations that require manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures and pricing information; and state and non-U.S. laws governing the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

We have implemented compliance related programs and procedures consistent with our stage of development to help identify and deter healthcare and other violations by employees and other third parties that perform services for us. Notwithstanding our efforts, however, it is possible that governmental

authorities may conclude that our business practices do not comply with current or future statutes, regulations, agency guidance, or case law involving applicable healthcare or other applicable laws.

Also, any material changes to any of the laws or regulations applicable to our business could harm our business, financial condition and results of operations.

***To obtain the necessary device approvals or clearances from regulatory authorities for our future product candidates, we will have to conduct various preclinical and clinical tests, which may be costly and time consuming, and may not provide results that will allow us to seek regulatory approval or clearance.***

The number of preclinical and clinical tests that will be required for regulatory clearance or approval varies depending on the disease or condition to be treated, the method of treatment, the nature of the device, the jurisdiction in which we are seeking approval or clearance and the applicable regulations. Regulatory agencies, including those in the United States, Canada, Europe, and other jurisdictions where medical devices and products are regulated can delay, limit or deny approval of a product for many reasons. For example, regulatory agencies:

- may not deem a technology or device to be reasonably safe or effective for any intended use or indication;
- may interpret data from preclinical and clinical testing differently than we do;
- may determine our manufacturing facility or processes do not comply with quality system regulations;
- may conclude that our products do not meet quality standards for durability, long-term reliability, biocompatibility, electromagnetic compatibility, or electrical safety; or
- may change their approval or clearance policies or adopt new regulations in a manner that is adverse to us.

These regulators may make requests or disagree with us regarding the design or conduct of our clinical trials, resulting in an increased risk of difficulties or delays in obtaining regulatory approval or clearance on future product candidates, or expanded indications of use for our existing products, and increased costs.

***Even if a potential device or product ultimately is cleared or approved by regulatory authorities, it may be cleared or approved only for narrow indications which may render it commercially less viable.***

Even if we complete clinical testing and a potential device or product of ours is cleared or approved, it may not be cleared or approved for the indications that are necessary or desirable for a successful commercialization. Regulators may grant marketing authorization contingent on the performance of costly additional clinical trials which may be required after approval or clearance. Regulators also may approve or clear our lead product candidates, including the CellFX System, for a more limited indication or a narrower patient population than we originally requested. Our preference will be to obtain as broad an indication as possible for use in connection with the particular disease or treatment for which it is designed. However, the final indication or labeling may be more limited than we originally seek. Any limitation on use may make the device or product commercially less viable and more difficult, if not impractical, to market. Therefore, we may not obtain the revenues that we seek in respect of the proposed product, and we will not be able to become profitable and provide an investment return to our investors.

***We will be subject to ongoing requirements and inspections that could lead to the restriction, suspension or revocation of our clearance.***

We, as well as any potential third-party manufacturer, will be required to adhere to FDA quality systems requirements, which include testing, control, and documentation requirements. We will be subject to similar regulations in foreign countries. Even when regulatory approval or clearance of a product is granted, the approval or clearance may be subject to limitations on the indicated uses for which the product may be marketed or to the conditions of approval or clearance, or contain requirements for costly post-marketing testing and surveillance to monitor the safety or efficacy of the product. Ongoing compliance with quality system regulations and other applicable regulatory requirements is strictly enforced in the United States through periodic inspections by state and federal agencies, including the FDA, and in international jurisdictions by comparable agencies. Failure to comply with regulatory requirements could result in, among other things, warning letters, fines, injunctions, civil penalties, recall or seizure of products, total or partial suspension of production, failure to obtain premarket clearance or premarket approval for devices, withdrawal of approvals or clearances previously obtained, and criminal prosecution. The restriction, suspension or revocation of regulatory approvals or clearances, or any other failure to comply with regulatory requirements would limit our ability to operate and could materially increase our costs.

***Our employees, collaborators and other personnel may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements and insider trading.***

We are exposed to the risk of fraud or other misconduct by our employees, collaborators and other personnel, which could include intentional, reckless and/or negligent conduct or disclosure that violates: (i) the laws of the FDA and other similar foreign regulatory bodies, including those laws requiring the reporting of true, complete and accurate information to such regulators; (ii) manufacturing standards; or (iii) healthcare fraud and abuse laws in the United States and similar foreign fraudulent misconduct laws. These laws may impact, among other things, future sales, marketing and education programs. The promotion, sales and marketing of healthcare items and services, as well as certain business arrangements in the healthcare industry, are subject to extensive laws designed to prevent fraud and abuse, kickbacks, self-dealing, and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, structuring and commissions, certain customer incentive programs, and other business arrangements generally. Activities subject to these laws also involve the use of information obtained in the course of patient recruitment for clinical trials.

We adopted a code of conduct applicable to all of our employees, but it is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent unlawful activities may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of significant fines or other sanctions. Whether or not we are successful in defending against any such actions or investigations, we could incur substantial costs, including legal fees, and divert the attention of management in defending ourselves against any of these claims or investigations, which could have a material adverse effect on our business and financial condition.

***We are subject to environmental regulations and any failure to comply with applicable laws could subject us to significant liabilities and harm our business.***

We are subject to a variety of local, state, federal, and foreign government regulations relating to the storage, discharge, handling, emission, generation, manufacture, and disposal of toxic or other hazardous substances used in the manufacture of our products. The failure to comply with past, present or future laws could result in the imposition of fines, third-party property damage and personal injury claims, investigation and remediation costs, the suspension of production, or a cessation of operations. We also expect that our operations will be affected by other new environmental and health and safety laws on an ongoing basis. Although we cannot predict the ultimate impact of any such new laws, they will likely result in additional costs, and may require us to change how we manufacture our products, which could have a material adverse effect on our business.

***We could be negatively impacted by actual or perceived violations of applicable anti-corruption law or our own internal policies designed to ensure ethical business practices.***

We are subject to anti-bribery, anti-corruption, and anti-money laundering laws, including the U.S. Foreign Corrupt Practices Act of 1977, or FCPA, and similar anti-bribery laws in non-U.S. jurisdictions, as well as export control laws, customs laws, sanctions laws and other laws governing our operations. As we grow our international presence and global operations, we will be increasingly exposed to trade and economic sanctions and other restrictions imposed by the United States, the European Union, and other governments and organizations.

Anti-corruption laws, such as the FCPA and the U.K. Anti-Bribery Act, generally prohibit us and our employees and intermediaries from bribing, being bribed or making other prohibited payments to government officials or other persons to obtain or retain business or gain some other business advantage. The FCPA also imposes accounting standards and requirements on publicly traded U.S. corporations and their foreign affiliates, which are intended to prevent the diversion of corporate funds to the payment of bribes and other improper payments. Numerous other laws restrict, and in some cases prohibit, U.S. companies from directly or indirectly selling goods, technology or services to people or entities in certain countries. In addition, these laws require that we exercise care in structuring our sales and marketing practices and effecting product registrations in foreign countries. Compliance with these regulations is costly.

We participate in collaborations and relationships with third parties whose actions could potentially subject us to liability under these anti-corruption laws. In addition, we cannot predict the nature, scope, or effect of future regulatory requirements to which our international operations might be subject or the manner in which existing laws might be administered or interpreted. Although we have implemented company policies requiring our employees and consultants to comply with the FCPA and similar laws, such policies may not be effective at preventing all potential FCPA or other violations. There can be no assurance that none of our employees and agents, or those companies to which we outsource certain portions of our business operations, will not take actions that violate our policies or applicable laws, for which we may be ultimately held responsible. Our development of infrastructure designed to identify anti-corruption matters and monitor compliance is at an early stage. If we are not in compliance with these laws, we may be subject to criminal and civil penalties, disgorgement and other sanctions and remedial measures, and legal expenses, which could have an adverse impact on our business, financial condition, results of operations, and liquidity. Likewise, any investigation of any potential violations of these laws by respective government bodies could also have an adverse impact on our reputation, our business, results of operations, and financial condition.

**Risks Related to Owning Our Common Stock**

***The price of our common stock has been, and we expect it to continue to be, highly volatile, and you may be unable to sell your shares at or above the price you paid to acquire them.***

The market price of our common stock has been highly volatile, and we expect it to continue to be highly volatile for the foreseeable future in response to many risk factors listed in this section, and others beyond our control, including:

- results of clinical trials of our planned products or those of our competitors;
- actions by regulatory bodies, such as the FDA, that affect our business or have the effect of delaying or rejecting approval or clearance of our planned products;
- actual or anticipated fluctuations in our financial condition and operating results;
- announcements by our customers, partners or suppliers relating directly or indirectly to our products, services or technologies;
- announcements of technological innovations by us or our competitors;
- changes in laws or regulations applicable to the CellFX System or to our planned end-effectors;
- announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures, capital commitments, or achievement of significant milestones;
- additions or departures of key personnel;
- competition from existing products or new products that may emerge;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;
- disputes or other developments related to proprietary rights, including patents, litigation matters or our ability to obtain intellectual property protection for our technologies;
- actual or alleged security breaches;
- announcements or expectations of additional financing efforts;
- sales of our common stock by us or our stockholders;
- stock price and volume fluctuations attributable to inconsistent trading volume levels of our shares;
- reports, guidance and ratings issued by securities or industry analysts;
- overall conditions in our industry and market, including the negative impact of armed conflicts, health epidemics and climate change on the global economy and markets; and
- general economic and market conditions.

Any of the above may cause our stock price or trading volume to decline. Stock markets in general, and the market for companies in our industry in particular, have experienced price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many companies, including ours. These fluctuations often have been unrelated or disproportionate to the operating performance of those companies. These broad market and industry fluctuations, as well as general economic, political and market conditions such as recessions, interest rate changes or international currency fluctuations, may negatively impact the market price of our common stock. Investors may not realize any return on their investment in us and may lose some or all of their investment. In the past, companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. The high volatility of our stock price, the composition of our Board and governance practices, including our Co-Chairman's repeated interest in acquiring additional shares in our Company through related party transactions, as well as countless other factors not identified above, increase the risk of securities litigation or shareholder derivative litigation against the Company and its Directors. Securities litigation against us could result in substantial costs and divert our management's attention from other business concerns and adversely impact our ability to raise capital to fund our operations, which could seriously harm our business.

***Sales or purchases of shares of our common stock may adversely affect the market for our common stock.***

If we or our stockholders, particularly our directors, executive officers and significant stockholders, sell or purchase, register for sale, or indicate an intent to sell or purchase, shares of our common stock in the public market, it may have a material adverse effect on the market price of our common stock. In particular, Robert W. Duggan, our majority stockholder and Co-Chairman, is not subject to any contractual restrictions with us on his ability to sell or transfer the shares of our common stock that he holds, and these sales or transfers could create substantial declines in the price of our securities or, if these sales or transfers were made to a single buyer or group of buyers, could contribute to a transfer of control of our Company to a third party. Many of Mr. Duggan's shares in the Company have been registered for resale pursuant to an effective registration statement on Form S-3. Sales by Mr. Duggan of a substantial number of shares, or the expectation of such sales, could cause a significant reduction in the market price of our common stock.

***We do not know whether an active, liquid and orderly trading market will exist for our common stock and as a result it may be difficult for you to sell your common stock.***

Prior to our initial public offering in May 2016, there was no public market for our common stock. Although our common stock is listed on The Nasdaq Capital Market ("Nasdaq"), the market for our shares has demonstrated varying levels of trading activity. As a result of these and other factors, you may not be able to sell your common stock quickly, at or above the price paid to acquire the stock or at all. Further, an inactive market may also harm our ability to raise capital by selling additional common stock and may harm our ability to enter into strategic collaborations or acquire companies or products by using our common stock as consideration.

***Concentration of ownership by our principal stockholder limits the ability of others to influence the outcome of director elections and other transactions requiring stockholder approval, or create the potential for conflicts of interest.***

A majority percentage of our outstanding stock is held by Robert W. Duggan, Co-Chairman of our Board, who beneficially owns approximately 73% of our common stock outstanding as of the date of this Annual Report. As a result, Mr. Duggan has control over corporate actions requiring stockholder approval, including the following actions:

- to elect or defeat the election of our directors;
- to amend or prevent amendment of our certificate of incorporation or bylaws;
- to effect or prevent a merger, sale of assets or other corporate transaction; and
- to control the outcome of any other matter submitted to our stockholders for vote.

Mr. Duggan's controlling interest in the Company also creates the potential for conflicts of interest which be viewed unfavorably by minority stockholders, thereby hurting our stock price. For example, in November 2021, we engaged outside legal counsel to represent the Company even though the same legal counsel currently represents Mr. Duggan personally in other matters. This legal counsel represented Mr. Duggan in certain related party transactions described herein and could represent both the Company and Mr. Duggan in future related party transactions. Three of our directors, including Mr. Duggan and Manmeet Soni, our Lead Independent Director and Audit Committee Chairman, are executives at Summit Therapeutics Inc., another company in which Mr. Duggan holds a controlling equity interest. There are no family relationships among any of our directors or executive officers, except that Mr. Duggan and Dr. Zanganeh are married and their beneficial ownership together exceeds 74%.

Additionally, because Mr. Duggan owns a majority of our outstanding shares, we are considered to be a "controlled" company under applicable Nasdaq rules. As such, we may voluntarily elect not to comply with certain of Nasdaq's corporate governance requirements, such as certain rules concerning the setting of executive compensation and the appointment of directors. Accordingly, during the period we remain a controlled company and during any transition period following a time when we are no longer a controlled company, other stockholders may not have the same protections afforded to stockholders of companies that are subject to all of the corporate governance requirements of the Nasdaq Stock Market. As a member of our Board, Mr. Duggan will adhere to the corporate governance standards adopted by the Company.

Even though we have not yet elected to take advantage of any of these corporate governance exemptions permitted by Nasdaq, Mr. Duggan's stock ownership and our status as a "controlled" company may discourage a potential acquirer from making a tender offer or otherwise attempting to obtain control of our Company, which in turn could reduce our stock price or prevent our stockholders from realizing a premium over our stock price. In addition, Mr. Duggan is not subject to any contractual restrictions on his ability to acquire additional shares of common stock and any such purchases, including purchases of equity securities in connection with any rights offerings or any alternative equity or equity-linked offering that we may conduct, could result in his acquisition of a larger percentage of our common stock.

Management currently beneficially holds a small percentage of our common stock. Other than their positions as directors or officers, and the restriction on the stockholders being able to call a special meeting limited to holders of 15% or more of the outstanding shares of common stock, our management will not be able to greatly influence corporate actions requiring stockholder approval.

***Robert W. Duggan's controlling ownership position may impact our stock price and may deter or prevent efforts by others to acquire us, which could prevent our stockholders from realizing a control premium.***

Robert W. Duggan is our Co-Chairman, and he beneficially owns approximately 73% of our common stock outstanding as of the date of this Annual Report. In addition, Mr. Duggan is not subject to any contractual restrictions on his ability to acquire additional shares of common stock, and any such purchases, including purchases of equity securities in connection with any rights offerings or any alternative equity or equity-linked offering that we may conduct, could result in his acquisition of a majority of our common stock. As a result of Mr. Duggan's controlling ownership and position as Co-Chairman, others may be less inclined to pursue an acquisition of us and therefore we may not have the opportunity to be acquired in a transaction that stockholders might otherwise deem favorable, including transactions in which our stockholders might realize a substantial premium for their shares. In addition, public speculation regarding Mr. Duggan, as well as our relationship with Mr. Duggan, could cause our stock price to fluctuate.

***We have incurred and will continue to incur costs as a result of operating as a public company and our management has been and will be required to devote substantial time to public company compliance initiatives.***

As a public company, listed in the United States, we have incurred and will continue to incur significant legal, accounting and other expenses due to our compliance with regulations and disclosure obligations applicable to us, including compliance with the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, as well as rules implemented by the SEC and Nasdaq. The SEC and other regulators have continued to adopt new rules and regulations and make additional changes to existing regulations that require our compliance.

Stockholder activism, the current political environment, and the current high level of government intervention and regulatory reform may lead to substantial new regulations and disclosure obligations, which may lead to additional compliance costs and impact, in ways we cannot currently anticipate, the manner in which we operate our business. Our management and other personnel have and will continue to devote a substantial amount of time to these compliance programs and monitoring of public company reporting obligations and, as a result of the new corporate governance and executive compensation related rules, regulations, and guidelines prompted by the Dodd-Frank Wall Street Reform and Protection Act, or the Dodd-Frank Act, and further regulations and disclosure obligations expected in the future, we will likely need to devote additional time and costs to comply with such compliance programs and rules. New laws and regulations as well as changes to existing laws and regulations affecting public companies, including the provisions of the Sarbanes-Oxley Act, the Dodd-Frank Act, and rules adopted by the SEC and Nasdaq, will likely result in increased costs to us as we respond to their requirements. We are currently evaluating and monitoring developments with respect to these rules and regulations, and we cannot predict or estimate the amount of additional costs we may incur or the timing of such costs.

Furthermore, these and future rules and regulations could make it more difficult or more costly for us to obtain certain types of insurance, including director and officer liability insurance, and we may be forced to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. The impact of these requirements could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors, our board committees or as our executive officers.

***We are a "smaller reporting company"; we cannot be certain if the applicable reduced disclosure requirements will make our common stock less attractive to investors.***

We qualify as a "smaller reporting company," as defined in the Exchange Act, and so long as we remain a smaller reporting company, we benefit from and may take advantage of scaled disclosure requirements. We cannot know if investors find our common stock less attractive because we may rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile and it may be difficult for us to raise additional capital as and when we need it. Investors may be unable to compare our business with other companies in our industry if they believe that our reporting is not as transparent as other companies in our industry. If we are unable to raise additional capital as and when we need it, our financial condition and results of operations may be materially and adversely affected.

***We have not paid dividends in the past and have no plans to pay dividends.***

For the foreseeable future, we plan to reinvest all of our earnings, to the extent we have earnings, into our product research and development efforts, so we have no plans to pay any cash dividends with respect to our securities. We cannot assure you that we would, at any time, generate sufficient surplus cash that would be available for distribution to the holders of our common stock as a dividend. Therefore, you should not expect to receive cash dividends on our outstanding common stock.

***Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of us, which may be beneficial to our***

***stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management and limit the market price of our common stock.***

Certain anti-takeover provisions of Delaware law and provisions in our certificate of incorporation and bylaws may have the effect of delaying or preventing a change of control or changes in our management. These provisions could also make it difficult for stockholders to elect directors that are not nominated by the current members of our board of directors or take other corporate actions, including effecting changes in our management. Our certificate of incorporation and bylaws include provisions that:

- authorize our board of directors to issue, without further action by the stockholders, up to 50,000,000 shares of preferred stock and up to approximately 500,000,000 shares of authorized but unissued shares of common stock;

- require that any action to be taken by our stockholders be effected at a duly called annual or special meeting and not by written consent;

- specify that special meetings of our stockholders can be called only by our board of directors, the chairman of our board of directors, any of our officers, or any stockholder holding at least fifteen percent (15%) of the voting power of the capital stock issued and outstanding and entitled to vote;

- establish an advance notice procedure for stockholder approvals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors;

- require the affirmative vote of holders of at least 66 2/3% of the voting power of all the then outstanding shares of our voting stock, voting together as a single class, to amend provisions of our certificate of incorporation or our bylaws;

- give our board of directors the ability to amend our bylaws by majority vote; and

- provide that vacancies on our board of directors may be filled only by a majority of directors then in office, even though less than a quorum.

These provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our Board, which is responsible for appointing the members of our management. Furthermore, our bylaws provide that unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall, to the fullest extent permitted by law, be the sole and exclusive forum for (a) any derivative action or proceeding brought on behalf of us, (b) any action asserting a claim of breach of fiduciary duty owed by any director, officer or other employee of us to us or our stockholders, (c) any action asserting a claim arising pursuant to any provision of the Delaware General Corporation Law, our certificate of incorporation or our bylaws, or (d) any action asserting a claim governed by the internal affairs doctrine, in each case subject to the Court of Chancery having personal jurisdiction over the indispensable parties named as defendants therein; provided that, if and only if the Court of Chancery dismisses any such action for lack of subject matter jurisdiction, such action may be brought in another state or federal court sitting in Delaware. Our bylaws further provide that the federal district courts of the United States of America will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act. Any person or entity purchasing or otherwise acquiring any interest in any of our securities shall be deemed to have notice of and consented to these provisions. These exclusive-forum provisions may discourage lawsuits against us or our directors, officers, and employees. In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which limits the ability of stockholders owning in excess of 15% of our outstanding voting stock to engage in certain types of transactions with us.

**General Risk Factors**

***Unfavorable global economic or political conditions could adversely affect our business, financial condition or results of operations.***

Our results of operations could be adversely affected by general conditions in the global economy and in the global financial markets, including the negative impact of armed conflicts, health epidemics and global warming on the global economy and markets. A global financial crisis or a banking crisis or a global or regional political disruption could cause extreme volatility in the capital and credit markets. The Company places its cash equivalents and investments with high credit quality financial institutions and, by policy, limits the amounts invested with any one financial institution or issuer and restricts the Company's investments to U.S. treasuries and money market instruments. However, in general the Company's deposits held with banks exceed the amount of insurance provided on such deposits. Despite our low-risk investment policies, a severe or prolonged economic downturn or political disruption could result in a variety of risks to our business, including our ability to raise additional capital when needed on acceptable terms, if at all. A weak or declining economy, banking crisis or political disruption could also strain our manufacturers or suppliers, possibly resulting in supply disruption, or cause our customers to delay making payments for our products. Any of the foregoing could harm our business and we cannot anticipate all of the ways in which the political or economic climate and financial market conditions could adversely impact our business.

The global financial markets and economy may also be adversely affected by the current or anticipated impact of military conflict, including the ongoing Russian-Ukrainian war, and the Hamas-Israel war, terrorism or other geopolitical events. Sanctions imposed by the United States and other countries in response to such conflicts, including the Russian-Ukrainian war and the Hamas-Israel war, may also adversely impact the financial markets and the global economy, and any economic countermeasures by the affected countries or others could exacerbate market and economic instability.

Recently, the U.S. government has indicated its intent to alter its approach to international trade policy and in some cases to renegotiate, or potentially terminate, certain existing bilateral or multi-lateral trade agreements and treaties with foreign countries. In addition, the U.S. government has initiated or is considering imposing tariffs on certain foreign goods. Related to this action, certain foreign governments, including those of China, Canada and Mexico, have instituted or are considering imposing tariffs on certain U.S. goods. It remains unclear what the U.S. Administration or foreign governments will or will not do with respect to tariffs or other international trade agreements and policies. A trade war or other governmental action related to tariffs or international trade agreements or policies has the potential to disrupt our research activities, affect our suppliers and/or the U.S. or global economy or certain sectors thereof and, thus, could adversely impact our businesses.

***If we experience material weaknesses in the future or otherwise fail to maintain an effective system of internal control over financial reporting in the future, we may not be able to accurately or timely report our financial condition or results of operations, which may adversely affect investor confidence in us and, as a result, the value of our common stock.***

As a public company, we are required to maintain internal control over financial reporting and to report any material weaknesses in such internal controls. Section 404 of the Sarbanes-Oxley Act requires that we evaluate and determine the effectiveness of our internal control over financial reporting and provide a management report on internal control over financial reporting. A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of our financial statements will not be prevented or detected on a timely basis. Ensuring that we have adequate internal financial and accounting controls and procedures in place so that we can produce accurate financial statements on a timely basis is a costly and time-consuming effort. Our internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with U.S. GAAP. We may not be able to complete our evaluation, testing and any required remediation in a timely fashion. During the evaluation and testing process, if we identify one or more material weaknesses in our internal control over financial reporting, we will be unable to assert that our internal controls are effective. The identification of one or more material weaknesses would preclude a conclusion that we maintain effective internal control over financial reporting. Accordingly, there could continue to be a reasonable possibility that a material misstatement of our financial statements would not be prevented or detected on a timely basis.

We are required to disclose changes made in our internal control and procedures on a quarterly basis. However, our independent registered public accounting firm will not be required to report on the effectiveness of our internal control over financial reporting pursuant to Section 404 of the Sarbanes-Oxley Act until we are no longer a "small reporting company." At such time, our independent registered public accounting firm may issue a report that is adverse in the event it is not satisfied with the level at which our controls are documented, designed or operating. Our remediation efforts may not enable us to avoid a material weakness in the future. If we are unable to assert that our internal control over financial reporting is effective, or when required in the future, if our independent registered public accounting firm is unable to express an unqualified opinion as to the effectiveness of our internal control over financial reporting, investors may lose confidence in the accuracy and completeness of our financial reports and the market price of our common stock could be adversely affected, and we could become subject to litigation risk and to investigations by Nasdaq, the stock exchange on which our securities are listed, by the SEC, and by other regulatory

authorities, which could require additional financial and management resources.

***If the interpretations, estimates or judgments we use to prepare our financial statements prove to be incorrect, investors and others may lose confidence in our financial data, which could cause our stock price to decline.***

We, like all publicly traded companies, are subject to complex securities laws and regulations and accounting principles and interpretations. The preparation of our financial statements requires us to interpret accounting principles and guidance and to make estimates and judgments that affect the reported amounts of assets and liabilities and the disclosure of contingent liabilities at the date of the financial statements, as well as the reported expenses incurred during the reporting periods. We base our interpretations, estimates and judgments on our historical experience, appropriate accounting guidance and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for the preparation of our financial statements. However, accounting guidance can sometimes be conflicting, especially with respect to accounting for complex corporate transactions. Moreover, generally accepted accounting principles presentation is subject to interpretation by the SEC, the Financial Accounting Standards Board ("FASB") and various other bodies formed to interpret and create appropriate accounting principles and guidance. If one of these bodies disagrees with our accounting recognition, measurement or disclosure or any of our accounting interpretations, estimates or assumptions, we may have to retroactively revise our previously reported results and our investors could lose confidence in the accuracy and completeness of our financial reports, which could cause our stock price to decline.

***We may become involved in litigation that may materially adversely affect us.***

From time to time, we may be involved in a variety of claims, lawsuits, investigations, or proceedings relating to securities laws, product liability, patent infringement, contract disputes, and other matters relating to various claims that arise in the normal course of our business in addition to governmental and other regulatory investigations and proceedings. In addition, third parties may, from time to time, assert claims against us. Such matters can be time-consuming, divert management's attention and resources, cause us to incur significant expenses or liability and/or require us to change our business practices. Because of the potential risks, expenses and uncertainties of litigation, we may, from time to time, settle disputes, even where we have meritorious claims or defenses, by agreeing to settlement agreements. Because litigation is inherently unpredictable, we cannot assure you that the results of any of these actions will not have a material adverse effect on our business, financial condition, results of operations and prospects.

***Our facilities in California are located near known earthquake faults, and the occurrence of an earthquake or other catastrophic disaster could cause damage to our facilities and equipment, which could require us to cease or curtail operations.***

Our facilities in Hayward, California are located near known earthquake fault zones and are vulnerable to damage from earthquakes. We are also vulnerable to damage from other types of disasters, including fire, floods, power loss, communications failures, and similar events. If any disaster were to occur, our ability to operate our business at our facilities would be seriously, or potentially completely, impaired. In addition, the nature of our activities could make it difficult for us to recover from a natural disaster. The insurance we maintain may not be adequate to cover our losses resulting from disasters or other business interruptions. Accordingly, an earthquake or other disaster could materially and adversely harm our ability to conduct business.

**Item 1B. Unresolved Staff Comments**

None.

**Item 1C. Cybersecurity**

**Cybersecurity Risk Management and Strategy**

To combat ever-present cyber risks, the Company maintains a comprehensive cybersecurity program, which includes employee training, annual risk assessments and a comprehensive cybersecurity environment meant to detect, prevent, and limit unauthorized or harmful actions across our information technology environment. However, we operate in the medical device sector, which is subject to various cybersecurity risks that could adversely affect our business, financial condition, and results of operations, including intellectual property theft; fraud; extortion; harm to patients, customers, and employees; violation of privacy laws and other litigation and legal risk; and reputational risk.

We have implemented a risk-based approach to identify and assess the cybersecurity threats that could affect our business and information systems. We use recognized commercially reasonable measures, tools and methodologies to manage cybersecurity risk that are tested on a regular cadence. We also monitor and evaluate our cybersecurity posture on an ongoing basis through regular vulnerability scans, penetration tests and third-party reviews. Other key components of our cybersecurity program include, but are not limited to, asset management, encryption, data loss prevention technology, access controls, identity and access management (IAM), such as multi-factor authentication (MFA), vulnerability management, endpoint threat detection and response (EDR), logging and monitoring involving the use of security information and event management (SIEM), privileged access management (PAM), email and web gateway protection, multi-faceted backup and data recovery solutions, anti-malware, firewalls, IDS and IPS, auditing and monitoring, regular policy updates, security awareness training, anti-phishing campaigns, intrusion detection and prevention, vulnerability and patch management, and third-party risk management. We also subscribe to third-party threat intelligence tools and services that support monitoring, analyzing, and responding to emerging risks and threats. We require third-party service providers with access to personal, confidential, or proprietary information to implement and maintain comprehensive cybersecurity practices consistent with applicable legal standards, although currently we do not audit this. While we believe our cybersecurity practices are comparable to those of similarly situated companies, the Company does not currently audit its third-party service providers' cybersecurity practices, except through annual SOC-1 reviews and its regulatory and quality control auditing of vendors engaged in clinical trials or the manufacture of products used in the assembly of our medical devices. We also rely on industry leading third party service providers to provide the systems required to effectively run our clinical trials and require that these third-party service providers implement and maintain standard cybersecurity practices. We have business continuity plans that we regularly review and update in line with our evolving applications architecture. We believe our cybersecurity practices comply with applicable legal requirements, including those established by the FDA.

To date, we have not experienced any material security incidents or data breaches as a result of a compromise of our information systems and are not aware of any cybersecurity incidents that have had a material impact or are reasonably likely to materially affect our business strategy, operating results, or financial condition.

**Cybersecurity Governance**

One of the key functions of our board of directors is informed oversight of our compliance program, including the processes used to mitigate risks associated with cybersecurity threats. Our Board is responsible for monitoring and assessing strategic risk exposure generally, and our executive officers are responsible for the day-to-day management of the material risks we face. Our Board administers its enterprise-level oversight of risks associated with cybersecurity threats directly as a whole, as well as through delegation of responsibility to our Audit Committee, which serves and functions as the Board's primary oversight body to monitor the Company's cybersecurity and related information technology risk. The Audit Committee receives periodic reports from management personnel responsible for enterprise risk management, which also evaluates cybersecurity among other enterprise level risks on an annual basis. It also assesses the experience of management personnel responsible for preventing, mitigating, detecting, and remediating any cyber incidents, including applicable third-party providers. The Audit Committee also oversees the Company's disclosure of any cybersecurity incident deemed material as required by the SEC or any other governmental authority, as applicable.

At the operational level, the Company has established an information security team, including a Privacy and Security Council ("PSC"), consisting of representatives from IT, Legal, HR, and Finance, to help provide governance and strategic direction for managing cyber risks, maintaining IT regulatory compliance, and optimizing technology initiatives for alignment with our company goals and objectives. Pursuant to various policies adopted by the Company since 2021, including the Company's Privacy Policy, the Company's senior most IT employee, our Information Security Coordinator (our "ISC"), is a member of the PSC and has frontline responsibility for assessing, identifying and managing material risks from cybersecurity threats. The PSC convenes not less than annually, and meetings include updates on cybersecurity matters provided by the information security team.

Our ISC has expertise in the following areas which assist in assessing and managing applicable cybersecurity risk: 27 years of IT experience including endpoint detection, security, incident management and response, vulnerability management and response, event management and response, and network security segmentation. The ISC provides regular reports on ongoing risk and mitigation practices, including information about cyber risk management governance and status updates on various projects intended to enhance the overall cybersecurity posture of the Company, to our Chief Executive Officer, Chief Financial Officer, Chief Technology Officer, and General Counsel, who then report to the Audit Committee and the Board.

Our incident response plan designates our ISC as primarily responsible for identifying and evaluating any cybersecurity incident or suspected incident and reporting any such incidents to our General Counsel in order for management to evaluate materiality, and to report to our Audit Committee, our Board and make public disclosures, as applicable. Our General Counsel is responsible for routinely updating both the Board and the Audit Committee on the Company's cybersecurity personnel, practices and processes and, pursuant to our data breach response policy, which is updated from time to time, he must report to the Board in the event of any detected material incident and regularly update the Board on any mitigation and remediation steps being taken in connection with the Company's response. The Company has, from time to time, engaged external experts, including cybersecurity assessors, consultants, auditors, and legal counsel, in evaluating and testing our risk management systems and on a project-specific basis to assist us with projects that will improve our IT infrastructure, strengthen our products' security posture, and improve our cyber readiness. This enables us to leverage specialized knowledge and insights, ensuring our cybersecurity strategies and processes remain current.

**Item 2. Properties**

We currently lease approximately 50,300 square feet of premises located in Hayward, California, which is used for our principal operating facility. The term of the original lease included approximately 15,700 square feet for 62 months and commenced on July 1, 2017. In May 2019, we entered into an amendment which enabled us to expand the lease by approximately 34,600 additional square feet, for a total of approximately 50,300 square feet. The amendment also included an option to extend the term of the lease. Approximately 13,300 square feet of the additional space was occupied in November 2019 as part of the first phase, and the remaining approximately 21,300 square feet was occupied in May 2020 as part of the second phase. The term of the total lease was extended through October 2029.

In November 2024, we leased approximately 2,000 square feet of premises located in Miami, Florida, which is used for our corporate headquarters. The term of the lease is 65-months and it commenced on November 8, 2024.

We believe that our existing and expanded facilities will be sufficient to meet our needs for the foreseeable future.

**Item 3. Legal Proceedings**

From time to time, we may be involved in various legal proceedings arising in the ordinary course of business. Having resolved our earlier dispute with our former Chief Financial Officer, we are not presently a party to any legal proceedings that, in the opinion of management, could have a material adverse effect on our results of operations or financial condition. Regardless of outcome, however, any litigation could have an adverse impact on us because of defense and settlement costs, diversion of management resources, negative publicity, reputational harm, and other factors.

**Item 4. Mine Safety Disclosures**

Not applicable.

## PART II

### Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

**Market Information**

Our common stock is listed on Nasdaq and has been traded under the symbol "PLSE" since May 18, 2016.

**Holders of Record**

As of March 20, 2025, there were approximately 11 stockholders of record of our common stock. We believe the actual number of stockholders is greater than this number of record holders and includes stockholders who are beneficial owners, but whose shares are held in "street" name by brokers and other nominees. This number of holders of record also does not include stockholders whose shares may be held in trust by other entities.

**Dividend Policy**

We have never declared or paid any cash dividend on our common stock and have no present plans to do so. We intend to retain earnings for use in the operation and expansion of our business.

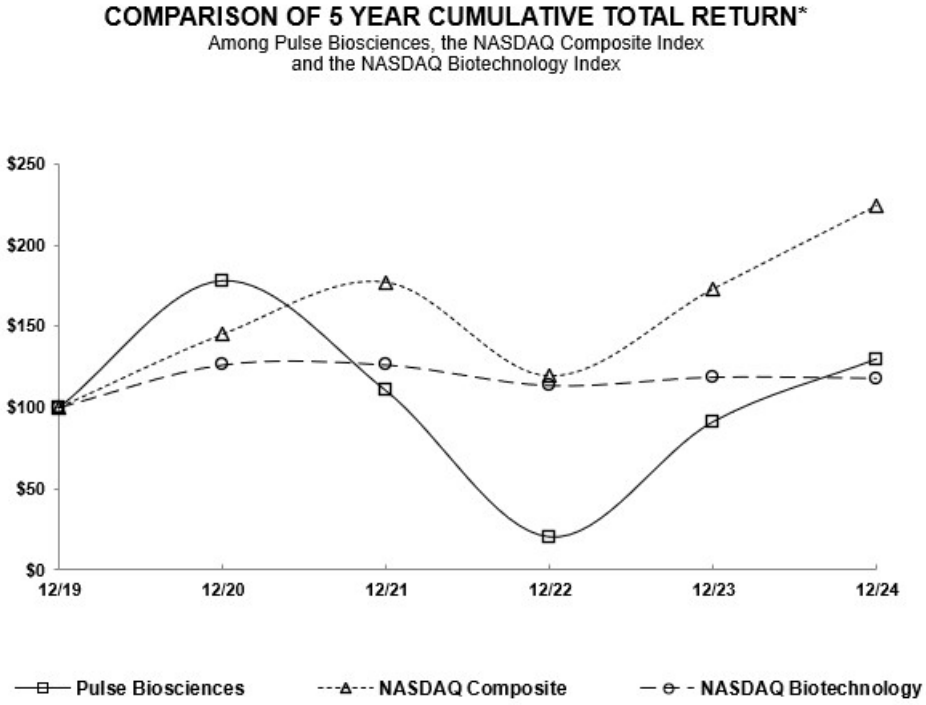
**Sales of Unregistered Securities**

On September 1, 2024, we sold 4,221 unregistered shares of our common stock to four accredited investors participating in our Employee Stock Purchase Plan and pursuant to the other terms of that plan, for the aggregate purchase price of $20,000. The shares of common stock issued in the foregoing transactions were issued without registration under the Securities Act of 1933, as amended (the "Securities Act"), in reliance on the exemptions provided by Section 4(a)(2) of the Securities Act as a transaction not involving a public offering and/or Rule 506 promulgated under the Securities Act as sales to accredited investors, and in reliance on similar exemptions under applicable state laws. Based on our investigation and the information provided to us, we determined the purchasers were accredited investors.

**Performance Graph**

The performance graph included in this Annual Report on Form 10-K shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended ("Exchange Act"), or incorporated by reference into any filing of Pulse Biosciences, Inc. under the Securities Act of 1933, as amended, or the Exchange Act, except as shall be expressly set forth by specific reference in such filing.

The following graph matches our cumulative 5-year total shareholder return on common stock with the cumulative total returns of the Nasdaq Composite Index and the Nasdaq Biotechnology Index. The graph tracks the performance of a $100 investment in our common stock and in each index (with the reinvestment of all dividends) from December 31, 2019, to December 31, 2024. Such returns are based on historical results and are not intended to suggest future performance.




*$100 invested on 12/31/19 in stock or index, including reinvestment of dividends.
Fiscal year ending December 31.

**Item 6. Selected Financial Data**

The Company is a smaller reporting company as defined by Rule 12b-2 of the Exchange Act and is not required to provide the information required under this item.

**Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations**

*You should read the following discussion and analysis of our financial condition and results of operations together with our consolidated financial statements and the related notes thereto included in Item 8 under the heading "Financial Statements and Supplementary Data". Some of the information contained in this discussion and analysis or set forth elsewhere in this Form 10-K contains forward-looking statements that involve risks and uncertainties, including statements regarding our expected financial results in future periods. The words "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. 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. You should read the "Risk Factors" section of this Form 10-K for a discussion of important factors that could cause actual results to differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis. We do not assume any obligation to update any forward-looking statements.*

**Overview**

We are a novel ablation company committed to health innovation using our 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 nonthermally clear or kill targeted cells. NPS technology, also referred to as 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. We developed our 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, we have designed a variety of applicators, or disposables, 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, we decided in 2022 to focus our primary efforts on the use of nsPFA energy and the CellFX platform in the treatment of atrial fibrillation and in a select few other markets where it could have a profound positive impact on healthcare for both patients and providers, such as surgical soft tissue ablation.

*CellFX nsPFA Percutaneous Electrode System*

Our first product for soft tissue ablation in a surgical setting, the nsPFA Percutaneous Electrode System, consists of a disposable, percutaneous, needle electrode for use with our proprietary CellFX Console. This novel electrode is designed to harness and deliver the key advantages of nsPFA energy, enabling precise nonthermal removal of cellular tissue without inducing thermal necrosis.

After years of preclinical development and testing, in June 2023, we initiated a first-in-human study using our proprietary nsPFA-enabled percutaneous electrode. This study was conducted by Professor Stefano Spiezia at the Ospedale del Mare in Naples, Italy, to help us better understand and confirm the mechanism of action and tissue response of nsPFA energy in internal organs such as the thyroid. Thirty study subjects were treated, all of whom tolerated the procedure well with no reported serious side effects. Ultrasound images post-procedure showed treated portions of the benign thyroid nodules were mostly resorbed with no sign of scarring or fibrosis by ultrasound, which can be a side effect of other ablation modalities using thermal energies.

In parallel, in November 2023, we filed a premarket notification 510(k) with the FDA for clearance to commercialize our novel nsPFA Percutaneous Electrode System in the United States. In March 2024, we received FDA 510(k) clearance for our nsPFA Percutaneous Electrode System for use in the ablation of soft tissue in percutaneous and intraoperative surgical procedures. More recently, in August 2024, we received FDA 510(k) clearance for a second size of the percutaneous electrode needle, which we believe will provide our customers with an additional treatment option for their patients.

Having secured 510(k) clearance to market and sell the nsPFA Percutaneous Electrode System in the United States with different sizes of percutaneous electrode needles, we have engaged with experts in the field of soft tissue ablation to gather information that will help shape our future commercial endeavors. To date, we have placed our CellFX System with eight sites in the United States and these sites have been performing initial patient treatments and evaluating the CellFX System under short-term evaluation agreements. To date, the clinicians in our pilot program have completed more than 70 patient procedures. We expect to pursue more clinical evidenced-based milestones throughout 2025 in connection with evaluating the early pilot commercialization of our percutaneous electrodes, and we expect to commence a pivotal clinical trial in mid-2025 to support a specific labeling indication to commercialize the nsPFA Percutaneous Electrode System in the United States as a treatment for benign thyroid nodules.

*Our Cardiac Surgical Program*

Atrial fibrillation ("AF") is a type of heart arrythmia, or irregular heartbeat, caused by faulty electrical signals in the heart. AF is a highly prevalent condition and is growing significantly with an ageing population. It is estimated that 43 million people worldwide are affected by AF. Treatment requires the precise and safe ablation of heart tissue to block or otherwise prevent these faulty electrical signals from causing the irregular heartbeat, and we believe nsPFA technology is uniquely suited to perform an integral role for this application and that it will prove to be highly differentiated from standard thermal energy modalities in use today.

The results of preclinical and clinical testing of both our nsPFA cardiac products, namely our surgical ablation clamp and our endocardial ablation catheter, have exceeded our expectations and initial data have been presented at physician and industry conferences. While these devices serve different physicians, the application of the energy to safely and effectively ablate cardiac tissue and the treatment of AF are the same, and we believe there will be important synergies realized through their contemporaneous development. The Company's cardiac surgical ablation clamp and cardiac endocardial ablation catheter both generate our proprietary nsPFA pulses of electrical energy. We discuss each of these products under development in more detail below.

*CellFX nsPFA Cardiac Clamp*

Our surgical cardiac ablation clamp is designed for use by cardiac surgeons during the surgical treatment of AF. The standard of care surgical procedure for the treatment of AF is performed by cardiac surgeons and called the Cox-Maze procedure. The Cox-Maze procedure typically uses thermal ablation technologies, such as heat with radiofrequency ablation or cold with cryoablation, to create specific ablation lines in the heart muscle. These ablation lines block the conduction of electrical impulses and can cure patients of their AF.

We believe our nsPFA technology can provide important advantages over today's thermal modalities in creating these ablation lines. For example, surgeons using the CellFX System should be able to deliver faster ablations and through thicker tissue than thermal modalities because of the nonthermal mechanism of action that nsPFA employs, which is not affected by heatsinks such as blood in the heart. In preclinical studies, our nsPFA Cardiac Clamp has consistently achieved transmural ablations in less than two seconds, independent of tissue type or thickness. Moreover, thermal modalities can cause char formation on electrode surfaces which can cause gaps in the ablation lines that might lead to treatment failure. This should not be an issue with nsPFA ablation given its nonthermal nature. Also, because nsPFA ablation does not impact acellular tissue, such as collagen or cartilage, our technology has the potential to offer significant safety advantages over thermal modalities by allowing surgeons to ablate near and into vessels and valves without concern of permanent damage. And finally, nsPFA ablation has been shown to spare nerves of any permanent damage, even when treated directly, which is another concern for thermal modalities. We believe these advantages will be important to cardiac surgeons, so we are working with leaders in the field to develop this technology quickly.

Over the last several years, we have been developing the cardiac ablation clamp from proof-of-concept to prototype, and we now have what we believe will be our initial commercial design. The device was designed with the input of key physicians in cardiac surgery, and we believe it will offer a highly differentiated option relative to the standard of care thermal modalities. Since 2023, we have been meeting with the FDA to discuss the regulatory requirements for a potential 510(k) clearance or other approval to market our cardiac clamp in the United States. Today, we plan to pursue a PMA application for FDA approval to market the cardiac clamp specifically as a surgical way to treat AF. Seeking an AF indication through a PMA application will require pivotal clinical data to support the application. We expect to begin our pivotal clinical trial of the cardiac surgical clamp for AF in mid-2025. With PMA approval, we expect that we would then commercialize the nsPFA Cardiac Surgery System in the United States specifically as a treatment for AF. Separately, we have already enrolled thirty patients in our first-in-human clinical study of the cardiac clamp, a multi-site study of AF in the Netherlands. All of the patients in our first-in-human study have tolerated the procedure well and acute data have been encouraging. We expect data from this study will provide important support for our IDE submission for the pivotal clinical trial as well as initial evidence of the effectiveness and safety of our cardiac surgical ablation clamp as a surgical way to treat AF.

In July 2024, we received Breakthrough Device Designation from the FDA for our nsPFA Cardiac Surgery System for the treatment of AF. The FDA's Breakthrough Devices Program is a voluntary program for certain medical devices that potentially provide for more effective treatment or diagnosis of a life-threatening or irreversibly debilitating disease or condition. More recently, our Cardiac Surgery System was enrolled in the FDA's Total Product Life Cycle (TPLC) Advisory Program (TAP). The FDA's Center for Devices and Radiological Health (CDRH) launched the TAP program to help generate more rapid development of high-quality, safe, effective, and innovative medical devices that are critical to public health. TAP's primary goal is to expedite patient access to innovative medical devices by providing early, frequent and strategic communications with the FDA and facilitating engagement with other key parties for developers of devices of public health importance. Both programs are designed to expedite the development, assessment, and review of medical devices for premarket approval, 510(k) clearance, or De Novo marketing authorization. Breakthrough Devices, even those enrolled in the FDA's TAP Program, must still meet the FDA's rigorous standards for device safety and effectiveness in order to be authorized for marketing, however.

*CellFX nsPFA 360° Cardiac Catheter*

We believe our cardiac, endocardial, catheter ablation device will have many of the same advantages that the surgical ablation clamp appears to have with respect to both performance and safety compared to standard thermal modalities. Our catheter is uniquely designed to provide a circumferential, or circular, ablation in a single treatment cycle. We believe this will enable faster treatment times compared to what is currently performed with thermal modalities, especially when ablating around the pulmonary veins, a common treatment approach for AF.

In recent years, Pulsed Field Ablation ("PFA") has gained attention in electrophysiology for the treatment of AF because of its safety profile and speed. Current clinical products employing PFA in AF treatment differ from nsPFA technology in that the pulse widths are longer, typically in the microsecond domain. We believe nsPFA technology, which delivers pulses of electrical energy that are each less than a millionth of a second long, can offer similar safety advantages as PFA and may provide improved efficacy advantages based on the circumferential design of our catheter and because it appears nsPFA technology can create deeper ablations.

Similar to the cardiac ablation clamp, our proprietary catheter has been in development for several years and we have been working with leaders in the electrophysiology field to test the catheter in preclinical studies. After seeing encouraging preclinical results, in December 2023, we initiated a clinical study in Prague, Czech Republic, to test our nsPFA 360° Cardiac Catheter in patients with AF and both acute data and remapping data from this study have been promising. We therefore expanded the initial clinical protocol in 2024 to enroll more than 80 patients, from 30, and to include participation by two additional sites. The study is now almost fully enrolled. Investigators have successfully remapped more than half of the study participants and we have been encouraged by the results seen in the study. Therefore, given the compelling data to date, we expect to commence a U.S. IDE pivotal clinical study of our proprietary 360° cardiac catheter sometime in mid-2025. We continue to believe we will need PMA approval from the FDA in order to market and sell our catheter in the United States.

*The CellFX Console*

The CellFX Console is a tunable, software-enabled, console-based platform, designed to accommodate the clinical workflow preferred by physicians. The CellFX System is configured to accept a variety of disposable applicators or electrodes across a range of clinical applications. In February 2021, we received 510(k) clearance from the FDA for the CellFX System for dermatologic procedures requiring ablation and resurfacing of the skin. In January 2021, we received Conformité Européene ("CE") marking approval for the CellFX System, which allows for marketing of the system in the European Union ("EU"). Shortly after these regulatory clearances, we began commercializing the CellFX System in dermatology for the treatment of benign skin lesions. However, in September 2022, we announced a shift in our focus from dermatology to cardiology and soft tissue ablation. We have ceased all commercial sales and marketing operations in dermatology. At the present time, we continue to support our remaining commercial users and remain open to a potential commercial partnership. The CellFX System is being used for our current efforts in the treatment of AF and as part of the nsPFA Percutaneous Electrode System.

We continue to believe nsPFA ablation, as well as NPS technology more broadly, has the potential to provide superior outcomes across a variety of medical disciplines and we may seek partnership opportunities to develop additional applications.

*Financing Our Business*

Over the past few years, Robert Duggan, our majority stockholder and Co-Chairman, has made significant investments in our Company to fund its operations. In June 2022, we completed a common stock rights offering to our existing stockholders, which raised $15 million in aggregate. Mr. Duggan purchased approximately 56% of the shares offered through this offering. Then, in September 2022, we entered into a loan agreement with Mr. Duggan pursuant to which he lent us $65 million to fund our product development operations. In April 2023, this loan agreement was terminated when Mr. Duggan and the Company entered into a Securities Purchase Agreement whereby the shares were paid for through the cancellation of both the principal sum of $65.0 million and all accrued and unpaid interest owed at the time under the 2022 Loan Agreement, which totaled approximately $0.2 million. In June 2024, we completed a rights offering of units (each unit comprising a share of our common stock and two warrants, each to purchase a one-half share of our common stock) to our existing stockholders, which raised $60 million in aggregate. Mr. Duggan purchased approximately 88% of the shares offered through this offering. Mr. Duggan may or may not elect to participate in any number of future fundraisings by the Company, whether similar to those described above or otherwise, and he may choose to invest more than his current pro rata share in any of these fundraisings, or alternatively he may offer to provide additional debt financing as may be needed in order to maintain the Company as a going concern.

The source, timing and availability of any future financing will depend largely upon market conditions and perceived progress in the Company's on-going product development initiatives, as well as future clinical and regulatory developments concerning the CellFX System and our other NPS-based technologies. Funding may not be available when needed, at all or on terms acceptable to us. Lack of necessary funds may require us to, among other things, delay, scale back or eliminate some or all of our commercial activities, reduce headcount, trim research and product development programs, discontinue clinical trials, stop all or some of our manufacturing operations, defer capital expenditures, deregister from being a publicly traded company and delist from Nasdaq, or license our potential products or technologies to third parties, possibly on terms that cannot sustain our current business. In addition, economic instability caused by the armed conflicts in the Middle East and Ukraine and high interest rates, together with other market factors, could have an adverse impact on potential sources of future financing.

We have incurred substantial operating losses and have used cash in our operating activities since inception. To fund our business, we may utilize some combination of public or private equity offerings, debt financings, or potential new collaborations in the future. There can be no assurance, however, that any additional financing or any revenue-generating collaboration will be available when needed or that we will be able to obtain financing or enter into a collaboration on terms acceptable to us.

**Critical Accounting Policies and Significant Judgments**

The discussion and analysis of financial condition and results of operations is based upon our consolidated financial statements, which have been prepared in accordance with the rules and regulations of the SEC. Certain accounting policies and estimates are particularly important to the understanding of our financial position and results of operations and require the application of significant judgment by management or can be materially affected by changes from period to period in economic factors or conditions that are outside of the Company's control. As a result, these issues are subject to an inherent degree of uncertainty. In applying these policies, management uses its judgment to determine the appropriate assumptions to be used in the determination of certain estimates. Those estimates are based on our historical operations, future business plans and the projected financial results, the terms of existing contracts, trends in the industry and information available from other outside sources. We continually evaluate the accounting policies and estimates used in preparing our consolidated financial statements.

***Stock-Based Compensation***

Our stock-based compensation programs include stock options and an employee stock purchase program. We periodically issue stock options to officers, directors, employees, and consultants for their services to the Company. Such issuances vest and expire according to terms established at the issuance date. Stock-based payments to officers, directors and employees, including grants of employee stock options, are recognized in the financial statements based on their grant date fair values, which are estimated using the Black-Scholes option-pricing model. Stock-based compensation expense is charged to operations on a straight-line basis over the requisite service period. We have granted stock options with time-based, performance-based, and market-based vesting conditions. In October 2024, our Board approved changes to the vesting conditions of certain outstanding common stock option awards so that the performance-based vesting criteria of those particular awards were modified to either time-based or market-based vesting criteria.

For stock options with performance-based vesting conditions, we do not recognize compensation expense until it is probable that the performance-based vesting condition will be achieved. The analysis to determine such probability involves estimates and judgements from management. The estimate of expense may be revised periodically based on the probability of achieving the required performance targets.

During 2024, we issued certain stock options with market-based vesting conditions and modified certain performance-based stock option awards to market-based options. The vesting conditions related to market-based options relate to the achievement of certain market capitalization targets of the Company. Using a Monte Carlo simulation model, we estimate the fair value of the market-based options on the grant date or modification date, with the associated stock-based compensation expense recognized over the requisite service period. The requisite service period is the service period derived from the Monte Carlo simulation model. If the market capitalization targets are met sooner than the derived service period, we will accelerate the recognition of stock-based compensation expense to reflect the cumulative expense associated with the vested shares. The Monte Carlo simulation model requires us to make assumptions and judgements about the variables used in the calculation including the expected volatility, the risk-free interest rate, cost of equity, and the expected term.

***Income Taxes***

We account for income taxes using the asset and liability method, whereby deferred tax assets and liability account balances are determined based on differences between the financial reporting and tax bases of assets and liabilities, and are measured using the enacted rates and laws that will be in effect when the differences are expected to reverse.

We provide a valuation allowance to reduce its deferred tax assets to the amount that is more likely than not to be realized. If we determine that we would be able to realize deferred tax assets in the future in excess of the recorded amount, an adjustment to the deferred tax assets would be credited to operations in the period such determination was made. Likewise, should we determine that we would not be able to realize all or part of its deferred tax assets in the future, an adjustment to the deferred tax assets would be charged to operations in the period such determination was made.

We account for uncertainties in income tax law under a comprehensive model for the financial statement recognition, measurement, presentation and disclosure of uncertain tax positions taken or expected to be taken in income tax returns as prescribed by Financial Accounting Standards Board ("FASB") issued Accounting Standards Codification ("ASC") 740-10- *Accounting for Uncertainty in Income Taxes*. The tax effects of a position are recognized only if it is "more-likely-than-not" to be sustained by the taxing authority as of the reporting date. If the tax position is not considered "more-likely-than-not" to be sustained, then no benefits of the position are recognized.

We are subject to U.S. federal income taxes and income taxes in California and various states. As our net operating losses have yet to be utilized, previous tax years remain open to examination by federal authorities and other jurisdictions in which we currently operate or have operated in the past. We are not currently under examination by any tax authority.

**Results of Operations**

***Comparison of the Years ended December 31, 2024 and 2023***

Our consolidated statements of operations as discussed herein are presented below:

| | Year Ended December 31, | | |
|---|---|---|---|
| **(in thousands)** | **2024** | **2023** | **$ Change** |
| Revenues: | | | |
| Product revenues | $ — | $ — | $ — |
| Total revenues | — | — | — |
| Cost and expenses: | | | |
| Research and development | 32,336 | 27,797 | 4,539 |
| General and administrative | 23,921 | 15,777 | 8,144 |
| Total cost and expenses | 56,257 | 43,574 | 12,683 |
| Loss from operations | (56,257) | (43,574) | (12,683) |
| Other income (expense): | | | |
| Interest income (expense), net | 2,672 | 1,364 | 1,308 |
| Total other income (expense) | 2,672 | 1,364 | 1,308 |
| Loss from operations, before income taxes | (53,585) | (42,210) | (11,375) |
| Income tax benefit | — | — | — |
| Net loss | $ (53,585) | $ (42,210) | $ (11,375) |

***Revenues***

There were no revenues for the years ended December 31, 2024 and 2023.

***Research and Development***

Research and development expenses consist of compensation and other employee-related expenses for research and development personnel, clinical trials and consulting costs related to the design, development and enhancement of our potential future products, prototype material and devices. Research and development expenses increased by $4.5 million to $32.3 million for the year ended December 31, 2024, compared to $27.8 million during the same period in 2023, primarily due to increases of $2.8 million in stock-based compensation, $1.6 million in compensation and other employee-related expenses, and $0.7 million in supplies; partially offset by a decrease of $0.6 million in paid services.

***General and Administrative***

General and administrative expenses consist of compensation and other employee-related expenses for executives, finance, legal, human resources, information technology, and administrative personnel, professional fees, patent fees and costs, insurance costs and other general corporate expenses. General and administrative expenses increased by $8.1 million to $23.9 million for the year ended December 31, 2024, compared to $15.8 million during the same period in 2023, primarily due to increases of $3.6 million in stock-based compensation, $1.2 million in legal settlement, $1.5 million in compensation and other employee-related expenses, $0.9 million in paid services and administrative costs, $0.7 million in severance cost, and $0.3 million in supplies and facilities and IT cost allocations.

***Other Income, net***

Interest income increased by $0.2 million to $2.7 million for the year ended December 31, 2024, compared to $2.5 million during the same period in 2023, driven by increased returns on higher cash balances. Interest expense decreased by $1.1 million to zero for the year ended December 31, 2024, compared to $1.1 million during the same period in 2023, driven by interest on the 2022 Loan Agreement, which was terminated in 2023.

**Liquidity and Capital Resources**

To date, we have not generated significant revenues from product sales. Since inception, we have funded our business primarily through the issuance of equity securities and debt. Over the next few years, we intend to invest heavily in research and development to make our existing products ready for commercial launch and complete their clinical testing and to assess the feasibility of potential future products.

On June 9, 2022, we completed the 2022 Rights Offering resulting in the sale of 7,317,072 Units, at a price of $2.05 per Unit, with each Unit consisting of one share of the Company's common stock, par value $0.001 per share, and one warrant to purchase one share of common stock at $2.05 per share. 7,317,072 shares of common stock and warrants to acquire up to an additional 7,317,072 shares of common stock were issued in the 2022 Rights Offering. The Company received aggregate gross proceeds from the 2022 Rights Offering of $15 million. In May 2023, the Company delivered an irrevocable notice of redemption to warrant holders and, on June 16, 2023, it redeemed the last of the outstanding 2022 Rights Offering Warrants at a price of $0.01 per warrant share. Prior to the redemption date, warrants to purchase 7,250,897 shares were exercised, generating approximately $14.9 million of total gross proceeds to the Company. Robert W. Duggan, the Company's majority stockholder and Co-Chairman, purchased approximately 56% of the shares offered through the 2022 Rights Offering. As of December 31, 2024, there were no 2022 Rights Offering Warrants outstanding.

In September 2022, we entered into the 2022 Loan Agreement with Robert W. Duggan, our majority stockholder and Co-Chairman, in connection with Mr. Duggan lending the principal sum of $65.0 million to the Company. The 2022 Loan Agreement had a maturity date of March 20, 2024. Under the 2022 Loan Agreement, Mr. Duggan provided us, subject to certain conditions, an unsecured term loan facility in an original aggregate principal amount of $65.0 million. The 2022 Loan Agreement bore interest at a rate per annum equal to 5.0%, payable quarterly, commencing on January 1, 2023. On March 17, 2023, the Company and Mr. Duggan amended certain terms of the Loan Agreement. There were no changes to the interest rate, but the principal sum repayment date was changed to September 30, 2024. However, on April 30, 2023, we entered into a Securities Purchase Agreement with Mr. Duggan, pursuant to which we agreed to issue and sell to Mr. Duggan 10,022,937 shares of our common stock, par value $0.001 per share, in a Private Placement, at a price per share of $6.51. These shares were paid for through the cancellation of the amounts then owed by the Company under the 2022 Loan Agreement, the principal sum of $65.0 million and all accrued and unpaid interest outstanding, which totaled approximately $0.2 million as of April 30, 2023. The parties completed the Private Placement on May 9, 2023 and, upon closing and satisfaction of the outstanding debt, the 2022 Loan Agreement terminated, without early termination fees or penalties being owed by the Company. At December 31, 2024 and 2023, there were no remaining amounts owed to Mr. Duggan under the 2022 Loan Agreement.

On July 3, 2024, we announced the closing of our 2024 Rights Offering. The 2024 Rights Offering resulted in the sale of six million 2024 Units, at a price of $10.00 per 2024 Unit. Each 2024 Unit consisted of one share of our common stock, par value $0.001 per share, and two warrants, each being a warrant to purchase one-half of one share of common stock. The common stock and warrants comprising the 2024 Units separated upon the closing of the 2024 Rights Offering and were issued individually. Upon the closing of the offering, we issued a total of 5,999,998 shares of common stock and warrants to acquire up to approximately an additional six million shares of common stock, at an exercise price of $11 per whole share, and we received aggregate gross proceeds of $60 million. Robert W. Duggan, the Company's majority stockholder and Co-Chairman, purchased approximately 88% of the units offered through the 2024 Rights Offering. Half of the warrants issued in the rights offering were redeemable by us if our volume-weighted average price ("VWAP") exceeded 150% of the exercise price, or $16.50, for twenty consecutive trading days. In December 2024, we delivered an irrevocable notice of redemption to redeem this first tranche of common stock warrants because the VWAP of our common stock over the twenty consecutive trading days before the notice was $18.85. Then, in February 2025, we redeemed 18,221 warrants, specifically the ones subject to the 150% redemption feature, on the announced redemption date. The other half of the warrants issued in the 2024 Rights Offering are redeemable by us if our VWAP exceeds 200% of the exercise price, or $22.00, for twenty consecutive trading days. As of December 31, 2024, there were 253,246 2024 Rights Offering Warrants outstanding which were subject to the 150% redemption feature and there were 1,245,237 2024 Rights Offering Warrants outstanding which were subject to the 200% redemption feature. As of December 31, 2024, we have received $49.4 million in gross proceeds from exercises of the 2024 Rights Offering Warrants.

Our consolidated statements of cash flows as discussed herein are presented below:

| (in thousands) | Year Ended December 31, 2024 | 2023 |
|---|---|---|
| Net cash used in operating activities | $ (36,343) | $ (33,041) |
| Net cash used in investing activities | $ (125) | $ (121) |
| Net cash provided by financing activities | $ 110,141 | $ 16,388 |
| Net increase (decrease) in cash and cash equivalents | $ 73,673 | $ (16,774) |

To date, we have generated limited revenue and used cash in our operating activities. As a result, we have incurred significant operating losses in each year since our inception and we may continue to incur additional losses for the next several years. As of December 31, 2024, we had cash and cash equivalents of $118.0 million. Additionally, subsequent to December 31, 2024, we have received $14.1 million in gross proceeds from additional exercises of 2024 Rights Offering Warrants. See Note 13 for further details. We believe that our existing cash and cash equivalents will be sufficient to fund our projected operating requirements for at least the next twelve months from the filing date of this Annual Report on Form 10-K. However, we plan to raise additional capital in the future. We can give no assurance, at this time, that additional financing or a collaboration will be available when needed on terms acceptable to us, however.

These expectations are based on our current operating and financing plans which are subject to change. Until we are able to generate sustainable product revenues at profitable levels, we expect to finance our future cash needs through public or private equity offerings, debt financings, and/or potential new collaborations. Such additional funds may not be available on terms acceptable to us or at all. If we raise funds by issuing equity or equity-linked securities, the ownership of some or all of our stockholders may be diluted, and the holders of new equity securities may have priority rights over our existing stockholders. If adequate funds are not available, we may be required to curtail operations significantly or obtain funds by entering into agreements on unattractive terms. Our inability to raise capital could have a material adverse effect on our business, financial condition, results of operations and cash flows. For example, lack of necessary funds may require us to, among other things, reduce headcount, trim research and product development programs, discontinue clinical trials, defer capital expenditures, deregister from being a publicly traded company and delist from Nasdaq, or license our potential products or technologies to third parties, possibly on terms that cannot sustain our current business. In addition, the recent decline in economic activity caused by the armed conflicts in Ukraine and Israel, together with the deterioration of the credit, banking and capital markets, could have an adverse impact on potential sources of future financing.

***Operating Activities***

During 2024, we used cash of $36.3 million in operating activities. The difference between cash used in operating activities and net loss consisted primarily of stock-based compensation and depreciation and amortization, with a decrease in accounts payable, partially offset by increases in prepaid expenses and accrued expenses.

During 2023, we used cash of $33.0 million in operating activities. The difference between cash used in operating activities and net loss consisted primarily of stock-based compensation, depreciation and amortization, accrued interest, and right-of-use assets, partially offset by increases in accounts payable and accrued expenses.

***Investing Activities***

Our investing activities consist primarily of capital expenditures.

During 2024, cash used in investing activities was $0.1 million, which was for the purchase of property and equipment.

During 2023, cash used in investing activities was $0.1 million, which was for the purchase of property and equipment.

***Financing Activities***

During 2024, cash provided from financing activities was $110.1 million, primarily due to $59.6 million of net proceeds from the 2024 Rights Offering, $49.4 million of proceeds from the exercise of common stock warrants, $0.9 million of proceeds from the exercise of stock options, and $0.5 million from the sale of stock under our employee stock purchase plan, offset by $0.3 million of deferred issuance costs in relation to a future at-the-market equity offering.

During 2023, cash provided from financing activities was $16.3 million, primarily due to $14.8 million of proceeds from the exercise of common stock warrants, $1.2 million of proceeds from the exercise of stock options, and $0.4 million from the sale of stock under our employee stock purchase plan.

**Contractual Obligations**

***Operating Leases***

We currently lease approximately 50,300 square feet of premises located in Hayward, California, which is used for our principal operating facility. The term of the original lease included approximately 15,700 square feet for 62 months and commenced on July 1, 2017. In May 2019, we entered into an amendment which enabled us to expand the lease by approximately 34,600 additional square feet, for a total of approximately 50,300 square feet. The amendment also included an option to extend the term of the lease. Approximately 13,300 square feet of the additional space was occupied in November 2019 as part of the first phase, and the remaining approximately 21,300 square feet was occupied in May 2020 as part of the second phase. The term of the total lease was extended through October 2029.

In November 2024, we leased approximately 2,000 square feet of premises located in Miami, Florida, which is used for our corporate headquarters. The term of the lease is 65 months and it commenced on November 8, 2024.

The following table summarizes our contractual obligations as of December 31, 2024 (in thousands):

| | Payments Due by Period | | | | |
|---|---|---|---|---|---|
| (in thousands) | Total | Less Than 1 Year | 1 to 3 Years | 3 to 5 Years | More Than 5 Years |
| Operating leases | $ 11,212 | $ 2,151 | $ 4,527 | $ 4,461 | $ 73 |

**Off-Balance Sheet Arrangements**

At December 31, 2024, we did not have any transactions, obligations or relationships that constitute off-balance sheet arrangements.

In the ordinary course of business, we enter into standard indemnification arrangements. Pursuant to these arrangements, we indemnify, hold harmless, and agree to reimburse the indemnified parties for losses suffered or incurred by the indemnified party in connection with any trade secret, copyright, patent or other intellectual property infringement claim by any third party with respect to its technology, or from claims relating to our performance or non-performance under a contract. The maximum potential amount of future payments we could be required to make under these agreements is not determinable because it involves claims that may be made against us in future periods, but have not yet been made. To date, we have not incurred costs to defend lawsuits or settle claims related to these indemnification agreements.

We also enter and have entered into indemnification agreements with our directors and officers that may require us to indemnify them against liabilities that arise by reason of their status or service as directors or officers, except as prohibited by applicable law. In addition, we may have obligations to hold harmless and indemnify third parties involved with our fundraising efforts and their respective affiliates, directors, officers, employees, agents or other representatives against any and all losses, claims, damages and liabilities related to claims arising against such parties pursuant to the terms of agreements entered into between us and such third parties in connection with such fundraising efforts. No liability associated with such indemnification agreements has been recorded as of December 31, 2024.

**Trends, Events and Uncertainties**

Research and development of new technologies are, by their nature, unpredictable. Although we undertake development efforts with commercially reasonable diligence, there can be no assurance that the net proceeds from our financings will be sufficient to enable us to develop our technology to the extent needed to generate future sales to sustain our operations. If we do not continue to have enough funds to sustain our operations, we will consider other options to continue the research and development of our technology, including, but not limited to, additional financing through follow-on stock offerings, debt financings, or co-development agreements and /or other alternatives.

We cannot assure investors that our technology will be adopted or that we will ever achieve sustainable revenues sufficient to support our operations. Even if we are able to generate revenues, there can be no assurances that we will be able to achieve profitability or positive operating cash flows. There can be no assurances that we will be able to secure additional financing in the future on acceptable terms or at all. If our technology cannot be used to successfully treat AF, tumors and nodules, or if our cash resources are insufficient to satisfy our ongoing cash needs, we would be required to, among other things, delay, scale back or eliminate some or all of our activities, reduce headcount, trim research and product development programs, discontinue clinical trials, stop all or some of our manufacturing operations, defer capital expenditures, deregister from being a publicly traded company and delist from Nasdaq, license our potential products or technologies to third parties, possibly on terms that cannot sustain our current business, or curtail, suspend or discontinue our operations entirely.

Other than as discussed above and elsewhere in this Annual Report, we are not currently aware of any trends, events or uncertainties that are likely to have a material effect on our financial condition in the near term, although it is possible that new trends or events may develop in the future that could have a material effect on our financial condition.

**Item 7A. Quantitative and Qualitative Disclosures About Market Risk**

We are exposed to market risk in the ordinary course of our business. Market risk represents the risk of loss that may impact our financial position due to adverse changes in financial market prices and rates.

**Interest Rate and Market Risk**

Our exposure to interest rate and market risk is confined to our cash, cash equivalents and investments, all of which have maturities of less than one year. The goals of our investment policy are preservation of capital, fulfillment of liquidity needs and fiduciary control of our cash and investments. We also seek to maximize income from our investments without assuming significant risk. To achieve our goals, we may maintain a portfolio of cash equivalents and investments in a variety of securities of high credit quality. The securities in our investment portfolio are not leveraged, are classified as available-for-sale, and are, due to their relatively short-term nature, subject to minimal interest rate risk. We currently do not hedge interest rate exposure. Because of the short-term maturities of our investments, we do not believe that a hypothetical 10% change in market interest rates would have a material negative impact on the value of our investment portfolio. At December 31, 2024, we did not have any investments.

**Foreign Exchange Risk**

The majority of our expense and capital purchasing activities are transacted in U.S. dollars. In 2021, we expended operations and sales into Europe and Canada. While we currently have limited international operations, we may incur foreign exchange gains or losses in the future as we further commercialize and expand internationally.

**Item 8. Financial Statements and Supplementary Data**

**PULSE BIOSCIENCES, INC.**

**Index to Consolidated Financial Statements**


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## REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of Pulse Biosciences, Inc.

**Opinion on the Financial Statements**

We have audited the accompanying consolidated balance sheets of Pulse Biosciences, Inc. and its wholly owned subsidiaries (the "Company") as of December 31, 2024 and 2023, the related consolidated statements of operations and comprehensive loss, stockholders' equity (deficit), and cash flows, for each of the two years in the period ended December 31, 2024, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2024 and 2023, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2024, in conformity with accounting principles generally accepted in the United States of America.

**Basis for Opinion**

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

**Critical Audit Matters**

The critical audit matters communicated below are matters arising from the current-period audit of the financial statements that were communicated or required to be communicated to the audit committee and that (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing a separate opinion on the critical audit matters or on the accounts or disclosures to which they relate.

**Stockholders' Equity and Stock-Based Compensation –Market-based Options - Refer to Notes 2 and 6 to the financial statements**

*Critical Audit Matter Description*

During 2024, the Company issued certain stock options with market-based vesting conditions and modified certain performance-based stock option awards to market-based options. The vesting conditions related to market-based options relate to the achievement of certain market capitalization targets of the Company. Using a Monte Carlo simulation model, the Company estimates the fair value of the market-based options on the grant date or modification date, with the associated stock-based compensation expense recognized over the requisite service period. The requisite service period is the service period derived from the Monte Carlo simulation model. The determination of the fair value of market-based options is estimated using the expected volatility, the risk-free interest rate, cost of equity, and the expected term.

Given the significant judgments made by management to determine the grant date and modification date fair value of the market-based options, audit procedures required a high degree of subjective auditor judgment necessary in evaluating the Monte Carlo simulation model and the expected volatility used and an increased extent of effort, including the need to involve our fair value specialists.

*How the Critical Audit Matter Was Addressed in the Audit*

Our audit procedures related to the valuation of market-based options granted and modified included the following, among others:

- We inspected stock option agreements and Board of Directors minutes to evaluate key terms and conditions of the market-based options granted and modified.
- We tested the accuracy and completeness of the market-based options granted and modified during the year by agreeing the underlying inputs, such as grant date, modification date, exercise price, and vesting conditions, among others, back to source documents, such as Board of Directors minutes and stock option agreements.
- With the assistance of our fair value specialists, we evaluated management's valuation of the market-based options by:
  - ○Evaluating the Monte Carlo simulation model and the reasonableness of the valuation assumptions, including the expected volatility.
  - ○Independently calculating a fair value estimate for the market-based options.

**Stockholders' Equity and Stock-Based Compensation – 2024 Rights Offering and Subscription Rights and 2024 Rights Offering Warrants – Refer to Note 6 to the financial statements**

*Critical Audit Matter Description*

In 2024, the Company initiated a rights offering (the "2024 Rights Offering") and distributed non-transferable subscriptions rights at no charge to all holders of the Company's common stock as of the close of business on May 31, 2024 (the "Record Date") to purchase up to an aggregate of six million units (the "2024 Units"). Each 2024 Unit consisted of one share of the Company's common stock and two warrants, each being a warrant to purchase one-half of one share of common stock. The Company determined that the issuance of the subscription rights represent a pro-rata distribution issued to existing stockholders as of the Record

Date. The Company further concluded that the subscription rights and warrants represent equity-classified instruments. The Company determined the fair value of the subscription rights as of the Record Date, which involved the use of a Monte Carlo simulation model to value the underlying warrants. The Monte Carlo simulation model is based on certain unobservable inputs, such as a risk-free interest rate, stock price volatility, dividend yield, and expected term of the rights offering.

Given the complexity in applying the accounting framework and the significant judgments made by management in the valuation of the subscription rights, audit procedures required an increased extent of effort to evaluate the accounting conclusion that the subscription rights and the warrants were appropriately identified to be equity-classified instruments and a high degree of subjective auditor judgment necessary in evaluating the Monte Carlo simulation model and the stock price volatility used in the valuation of the subscription rights, including the need to involve our fair value specialists and professionals in our firm having expertise in financial instruments.

*How the Critical Audit Matter Was Addressed in the Audit*

Our audit procedures related to the evaluation of the accounting conclusion that the subscription rights and the warrants were appropriately identified to be equity-classified instruments and the valuation of the subscription rights included the following, among others:

- We read the agreements associated with the 2024 Rights Offering and tested the accuracy and completeness of the significant terms identified by management for purposes of determining the appropriate accounting treatment, including the accounting conclusion that the subscription rights and the warrants were appropriately identified to be equity-classified instruments.

- With the assistance of professionals in our firm having expertise in the accounting treatment for financial instruments, we evaluated the Company's conclusions regarding the accounting treatment applied to the subscription rights and underlying warrants as equity-classified instruments.

- With the assistance of our fair value specialists, we evaluated management's valuation of the subscription rights by:

  - Evaluating the Monte Carlo simulation model used to value the underlying warrants, and the reasonableness of the valuation assumptions, including the stock price volatility.

  - Independently calculating a fair value estimate for the underlying warrants.

/s/ Deloitte & Touche LLP

San Francisco, California
March 28, 2025

We have served as the Company's auditor since 2018.

**PULSE BIOSCIENCES, INC.**
**Consolidated Balance Sheets**
**(in thousands, except par value)**

| | December 31, | |
|---|---|---|
| | **2024** | **2023** |
| **ASSETS** | | |
| Current assets: | | |
| Cash and cash equivalents | $ 118,038 | $ 44,365 |
| Prepaid expenses and other current assets | 1,411 | 963 |
| Total current assets | 119,449 | 45,328 |
| Property and equipment, net | 1,160 | 1,528 |
| Intangible assets, net | 1,220 | 1,886 |
| Goodwill | 2,791 | 2,791 |
| Right-of-use assets | 7,163 | 7,256 |
| Other assets | 677 | 365 |
| Total assets | $ 132,460 | $ 59,154 |
| **LIABILITIES AND STOCKHOLDERS' EQUITY** | | |
| Current liabilities: | | |
| Accounts payable | $ 1,673 | $ 1,836 |
| Accrued expenses | 7,027 | 3,814 |
| Lease liability, current | 1,355 | 1,058 |
| Total current liabilities | 10,055 | 6,708 |
| Lease liability, less current portion | 7,543 | 8,086 |
| Total liabilities | 17,598 | 14,794 |
| Commitments and contingencies (Note 7) | | |
| Stockholders' equity: | | |
| Preferred stock, $0.001 par value; authorized – 50,000 shares; no shares issued and outstanding | — | — |
| Common stock, $0.001 par value; authorized – 500,000 shares; issued and outstanding – 65,926 shares and 55,144 shares at December 31, 2024 and 2023, respectively | 66 | 55 |
| Additional paid-in capital | 505,296 | 381,220 |
| Accumulated other comprehensive income (loss) | — | — |
| Accumulated deficit | (390,500) | (336,915) |
| Total stockholders' equity | 114,862 | 44,360 |
| Total liabilities and stockholders' equity | $ 132,460 | $ 59,154 |

See accompanying notes to the consolidated financial statements.

**PULSE BIOSCIENCES, INC.**
**Consolidated Statements of Operations and Comprehensive Loss**
**(in thousands, except per share data)**

| | Year Ended December 31, | |
|---|---|---|
| | **2024** | **2023** |
| Revenues: | | |
| Product revenues | $ — | $ — |
| Total revenues | — | — |
| Cost and expenses: | | |
| Research and development | 32,336 | 27,797 |
| General and administrative | 23,921 | 15,777 |
| Total cost and expenses | 56,257 | 43,574 |
| Loss from operations | (56,257) | (43,574) |
| Other income: | | |
| Interest income, net | 2,672 | 1,364 |
| Total other income | 2,672 | 1,364 |
| Loss from operations, before income taxes | (53,585) | (42,210) |
| Income tax provision | — | — |
| Net loss | (53,585) | (42,210) |
| Comprehensive loss | $ (53,585) | $ (42,210) |
| Net loss per share: | | |
| Basic and diluted net loss per share | $ (0.92) | $ (0.85) |
| Weighted average shares used to compute net loss per common share — basic and diluted | 58,398 | 49,737 |

See accompanying notes to the consolidated financial statements.

**PULSE BIOSCIENCES, INC.**
**Consolidated Statements of Stockholders' Equity (Deficit)**
**(in thousands, except per share amount)**

| | Common Stock | | Additional Paid-in | Accumulated Other Comprehensive | Accumulated | Total Stockholders' |
|---|---|---|---|---|---|---|
| | Shares | Amount | Capital | Income (Loss) | Deficit | Equity (Deficit) |
| Balance, December 31, 2022 | 37,235 | $ 37 | $ 292,420 | $ — | $ (294,705) | $ (2,248) |
| Issuance of common stock as part of debt extinguishment, net of issuance costs of $6 | 10,023 | 10 | 65,233 | — | — | 65,243 |
| Issuance of common stock upon exercise of warrants, net of issuance costs of $9 | 7,238 | 7 | 14,821 | — | — | 14,828 |
| Issuance of shares under employee stock purchase plan | 347 | 1 | 394 | — | — | 395 |
| Issuance of common stock upon exercise of stock options | 301 | — | 1,171 | — | — | 1,171 |
| Stock-based compensation expense | — | — | 7,181 | — | — | 7,181 |
| Net loss | — | — | — | — | (42,210) | (42,210) |
| Balance, December 31, 2023 | 55,144 | $ 55 | $ 381,220 | $ — | $ (336,915) | $ 44,360 |
| Issuance of common stock and warrants in connection with rights offering, net of issuance costs of $364 | 6,000 | 6 | 59,630 | — | — | 59,636 |
| Issuance of common stock upon exercise of warrants, net of issuance costs of $1 | 4,502 | 5 | 49,511 | — | — | 49,516 |
| Issuance of common stock upon exercise of stock options | 161 | — | 871 | — | — | 871 |
| Issuance of shares under employee stock purchase plan | 118 | — | 478 | — | — | 478 |
| Issuance of shares in at-the-market offering, net of issuance costs of $24 | 1 | — | — | — | — | — |
| Issuance of equity-classified subscription rights as part of rights offering (Note 6) | — | — | 47,700 | — | — | 47,700 |
| Rights offering deemed pro-rata distribution to shareholders (Note 6) | — | — | (47,700) | — | — | (47,700) |
| Stock-based compensation expense | — | — | 13,586 | — | — | 13,586 |
| Net loss | — | — | | — | (53,585) | (53,585) |
| Balance, December 31, 2024 | 65,926 | $ 66 | $ 505,296 | $ — | $ (390,500) | $ 114,862 |

See accompanying notes to the consolidated financial statements.

**PULSE BIOSCIENCES, INC.**
**Consolidated Statements of Cash Flows**
**(in thousands)**

| | Year Ended December 31, | |
|---|---|---|
| | **2024** | **2023** |
| **Cash flows from operating activities:** | | |
| Net loss | $ (53,585) | $ (42,210) |
| Adjustments to reconcile net loss to net cash used in operating activities: | | |
| Depreciation | 512 | 542 |
| Amortization of intangible assets | 666 | 665 |
| Stock-based compensation | 13,586 | 7,181 |
| Loss on disposal of fixed assets | 6 | 13 |
| Changes in operating assets and liabilities: | | |
| Prepaid expenses and other current assets | (403) | (65) |
| Other receivables | 48 | 109 |
| Right-of-use assets | 923 | 806 |
| Other long-term assets | (31) | — |
| Accounts payable | (201) | 263 |
| Accrued expenses | 3,212 | 1,219 |
| Lease liabilities | (1,076) | (896) |
| Accrued interest on related party note payable | — | (668) |
| Net cash used in operating activities | (36,343) | (33,041) |
| **Cash flows from investing activities:** | | |
| Purchases of property and equipment | (125) | (121) |
| Net cash used in investing activities | (125) | (121) |
| **Cash flows from financing activities:** | | |
| Proceeds from issuance of common stock under employee stock purchase plan | 478 | 395 |
| Proceeds from exercises of warrants | 49,424 | 14,828 |
| Proceeds from exercises of stock options | 871 | 1,171 |
| Proceeds from issuance of common stock and warrants in relation to rights offering, net of issuance costs | 59,649 | — |
| Issuance cost in relation to related party note extinguishment | — | (6) |
| Deferred issuance costs in relation to future at-the-market equity offering | (281) | — |
| Net cash provided by financing activities | 110,141 | 16,388 |
| Net increase (decrease) in cash and cash equivalents | 73,673 | (16,774) |
| Cash and cash equivalents at beginning of period | 44,365 | 61,139 |
| Cash and cash equivalents at end of period | $ 118,038 | $ 44,365 |
| | | |
| **Supplemental disclosure of noncash investing and financing activities:** | | |
| Rights offering deemed pro-rata distribution to shareholders | $ 47,700 | $ — |
| Principal and accrued interest of related party note settled via issuance of common stock | $ — | $ (65,249) |
| Right-of-use asset obtained in exchange for lease liability | $ 830 | $ — |
| Other receivable from exercise of warrants | $ 92 | — |
| Equipment purchases included in accounts payable and accrued expenses | $ 26 | $ — |
| Rights offering and warrant issuance costs in accounts payable and accrued expenses | $ 13 | $ — |

See accompanying notes to the consolidated financial statements.

**PULSE BIOSCIENCES, INC.**
**Notes to Consolidated Financial Statements**

## 1. Description of the Business

Pulse Biosciences, Inc. is 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"), and in a select few other markets where nsPFA could have a profound positive impact on healthcare for both patients and providers, such as surgical soft tissue ablation.

The Company was incorporated in Nevada on May 19, 2014. On June 18, 2018, the Company reincorporated from the State of Nevada to the State of Delaware. The Company is headquartered in Miami, Florida, with its principal operating facility located in Hayward, California.

The Company's activities are subject to significant risks and uncertainties, including the need for additional capital. The Company does not currently have any material cash flows from operations. It has had minimal revenue since inception and will need to raise additional capital to finance its operations. However, there can be no assurances that the Company will be able to obtain additional financing on acceptable terms and in the amounts necessary to fully fund its operating requirements.

## 2. Summary of Significant Accounting Policies

### *Principles of Consolidation*

The accompanying consolidated financial statements are prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP") and pursuant to the rules and regulations of the United States Securities Exchange Commission (the "SEC"). The consolidated financial statements include the financial statements of the Company and its wholly-owned subsidiaries and intercompany balances and transactions have been eliminated in consolidation.

### *Use of Estimates*

The preparation of financial statements in conformity with U.S. GAAP requires the Company to make estimates that affect the amounts reported in the financial statements and accompanying notes to the financial statements. Estimates include, but are not limited to, the valuation and recognition of stock-based compensation, the valuation of equity-classified subscription rights, income taxes, and the useful lives assigned to long-lived assets. The Company evaluates its estimates and assumptions based on historical experience and other factors and adjusts those estimates and assumptions when facts and circumstances dictate. Actual results could differ materially from these estimates.

### *Concentration of Credit Risk*

Financial instruments that potentially subject the Company to a concentration of credit risk consist of cash and cash equivalents. The Company places its cash equivalents with high credit quality financial institutions and, by policy, limits the amounts invested with any one financial institution or issuer. Deposits held with banks may exceed the amount of insurance provided on such deposits. The Company has not experienced any losses since inception.

### *Fair Value of Financial Instruments*

The Company believes the carrying amounts of its financial instruments, including cash equivalents, prepaid expenses and other current assets, accounts payable and accrued expenses, approximate fair value due to the short-term nature of such instruments.

***Cash and Cash Equivalents***

The Company invests its cash primarily in money market funds. The Company considers all highly liquid investments purchased with an original maturity of three months or less to be cash equivalents.

***Property and Equipment***

Property and Equipment is recorded at cost and depreciated using the straight-line method over their estimated useful lives, ranging from three to five years. Leasehold improvements are amortized using the straight-line method over the shorter of the lease term or estimated useful life. Upon the sale or retirement of property and equipment, the costs and related accumulated depreciation and amortization are removed from the balance sheet and the resulting gain or loss is reflected in operating expenses. Maintenance and repairs are charged to operations as incurred.

***Intangible Assets***

The Company's intangible assets consist of acquired patents and licenses, which are amortized over their estimated useful lives of twelve years.

***Long-Lived Assets***

The Company reviews long-lived assets, consisting of property and equipment and intangible assets, for impairment during each fiscal year or when events or changes in circumstances indicate the carrying value of these assets may exceed their current fair values. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to the estimated undiscounted future cash flows expected to be generated by the asset. No impairment losses were incurred during the periods presented.

***Goodwill***

The Company records goodwill when the consideration paid in a business acquisition exceeds the fair value of the net tangible assets and the identified intangible assets acquired. The Company reviews goodwill for impairment at the reporting unit level, of which there is one reportable unit, at least annually or whenever changes in circumstances indicate that the carrying value of the goodwill may not be recoverable. To date, there has been no impairment of goodwill.

***Stock-Based Compensation***

The Company's stock-based compensation programs include stock options and an employee stock purchase program.

The Company periodically issues stock options to officers, directors, employees, and consultants for services rendered. Such issuances vest and expire according to terms established at the issuance date. Stock-based payments to officers, directors and employees, including grants of employee stock options, are recognized in the financial statements based on their grant date fair values, which are estimated using the Black-Scholes option-pricing model. Stock-based compensation expense is charged to operations on a straight-line basis over the vesting period. The Company has granted stock options with both time-based as well as performance-based vesting conditions. For stock awards with performance-based vesting conditions, the Company does not recognize compensation expense until it is probable that the performance-based vesting condition will be achieved. The analysis to determine such probability involves estimates and judgements from management and the estimate of expense may be revised periodically. In October 2024, the Board approved changes to the vesting conditions of certain outstanding common stock option awards so that the performance-based vesting criteria of those particular awards were modified to either time-based or market-based vesting criteria.

During 2024, the Company issued certain stock options with market-based vesting conditions and modified certain performance-based stock option awards to market-based options. These vesting conditions relate to the achievement of certain market capitalization targets of the Company. Using a Monte Carlo simulation model, the Company estimated the fair value of the market-based options on the grant date or modification date, with the associated stock-based compensation expense recognized over the requisite service period. The requisite service period is the service period derived from the Monte Carlo simulation model. If the market capitalization targets are met sooner than the derived service period, the Company will accelerate the recognition of stock-based compensation expense to reflect the cumulative expense associated with the vested shares. The Monte Carlo simulation model requires the Company to make assumptions and judgements about the variables used in the calculation including the expected volatility, the risk-free interest rate, cost of equity, and the expected term. The assumptions used in the option-pricing model represent management's best estimates. If factors change and different assumptions are used, the Company's stock-based compensation expense could be materially different in the future.

See Note 6 for a detailed discussion of the Company's stock plans and stock-based compensation expense.

***Research and Development Costs***

Research and development costs consist primarily of compensation costs, fees paid to consultants and outside service providers and organizations (including university research institutes), costs associated with clinical trials, development prototypes and other expenses relating to the acquisition, design, development and testing of the Company's product candidates, and certain facilities related costs. Research and development costs incurred by the Company are expensed as incurred.

***Patent Costs***

The Company is the owner of numerous domestic and foreign patents. Due to the significant uncertainty associated with the successful development of one or more commercially viable products based on the Company's research efforts and any related patent applications, patent costs not related to acquired patents, including patent-related legal fees, filing fees and other costs, including internally generated costs, are expensed as incurred. During both of the years ended December 31, 2024 and 2023, patent costs totaled $0.5 million, respectively. Patent costs are included in general and administrative costs in the consolidated statements of operations and comprehensive loss.

***Income Taxes***

The Company accounts for income taxes under an asset and liability approach for financial accounting and reporting for income taxes. Accordingly, the Company recognizes deferred tax assets and liabilities for the expected impact of differences between the financial statements and the tax basis of assets and liabilities.

The Company records a valuation allowance to reduce its deferred tax assets to the amount that is more-likely-than-not to be realized. In the event the Company determines that it would be able to realize its deferred tax assets in the future in excess of its recorded amount, an adjustment to the deferred tax assets would be credited to operations in the period such determination was made. Likewise, should the Company determine that it would not be able to realize all or part of its deferred tax assets in the future, an adjustment to the deferred tax assets would be charged to operations in the period such determination was made.

The Company is subject to U.S. federal income taxes and state income taxes in various states. As the Company's net operating losses have yet to be utilized, previous tax years remain open to examination by federal authorities and other jurisdictions in which the Company currently operates or has operated in the past. The Company is not currently under examination by any tax authority.

The Company accounts for uncertainties in income tax law under a comprehensive model for the financial statement recognition, measurement, presentation and disclosure of uncertain tax positions taken or expected to be taken in income tax returns as prescribed by U.S. GAAP. The tax effects of a position are recognized only if it is more-likely-than-not to be sustained by the taxing authority as of the reporting date. If the tax position is not considered more-likely-than-not to be sustained, then no benefits of the position are recognized. At December 31, 2024 and 2023, the Company had not recorded any liability for uncertain tax positions. The Company includes interest and penalties related to uncertain tax positions as a component of income tax expense.

***Comprehensive Loss***

The Company displays comprehensive loss, and if applicable its components, as part of the consolidated statements of operations and comprehensive loss. There were no adjustments to comprehensive loss during both of the years ended December 31, 2024 and 2023.

***Net Loss per Share***

The Company calculates basic net loss per share by dividing net loss by the weighted-average number of shares of common stock outstanding during the period. Diluted net loss per share is computed by giving effect to all potential dilutive common stock equivalents outstanding during the period. For purposes of this calculation, options to purchase common stock and common stock warrants are considered common stock equivalents. Potential common shares that have an anti-dilutive effect (i.e., those that increase income per share or decrease loss per share) are excluded from the calculation of diluted net loss per share.

Based on the Accounting Standards Codification ("ASC") *260-10-55, Earnings Per Share - Implementation Guidance and Illustrations*, the Company determined that the 2024 Rights Offering (Note 6), contained a bonus element. A rights offering is deemed to have a bonus element when the exercise price at issuance is less than fair value of the Company's stock. The Company has retroactively adjusted earnings per share and weighted average number of shares outstanding for the bonus element for prior periods presented.

Basic and diluted net loss per common share is the same for all periods presented because all warrants and stock options outstanding are anti-dilutive.

The following outstanding stock options and warrants were excluded from the computation of diluted net loss per share for the periods presented because including them would have had an anti-dilutive effect:

| | Year Ended December 31, | |
|---|---|---|
| | **2024** | **2023** |
| Common stock warrants | 1,498,483 | — |
| Common stock options | 10,979,332 | 9,466,036 |
| Total | 12,477,815 | 9,466,036 |

***Segment and Geographical Information***

The Company has one operating and reporting segment and reports segment information in accordance with ASC 280, *Segment Reporting*. The Company's Chief Executive Officer, who is the chief operating decision maker ("CODM"), reviews financial information on an aggregate basis for allocating and evaluating financial performance; however, the CODM is regularly provided with more detailed expense information than what is included in the Statement of Operations and Comprehensive Loss. See Note 9 for further details of the Company's segment disclosures.

***Recent Accounting Pronouncements***

*Recently Adopted Accounting Pronouncements*

In November 2023, the FASB issued ASU 2023-07, *Segment Reporting (Topic 280): Improvements to Reportable Segment Disclosures*. The amendments in this ASU require disclosures, on an annual and interim basis, of significant segment expenses that are regularly provided to the CODM, as well as the aggregate amount of other segment items included in the reported measure of segment profit or loss. This ASU requires that a public entity disclose the title and position of the CODM and an explanation of how the CODM uses the reported measure(s) of segment profit or loss in assessing segment performance and deciding how to allocate resources. Public entities will be required to provide all annual disclosures currently required by Topic 280 in interim periods, and entities with a single reportable segment are required to provide all the disclosures required by the amendments in this ASU and existing segment disclosures in Topic 280. This ASU is effective for fiscal years beginning after December 15, 2023, and interim periods within fiscal years beginning after December 15, 2024, with early adoption permitted. The amendments in this ASU should be applied retrospectively to all prior periods presented in the financial statements. See Note 9 for details of the Company's segment reporting.

*Recent Accounting Pronouncements Not Yet Adopted*

In December 2023, the FASB issued ASU No. 2023-09, *Income Taxes (Topic 740): Improvements to Income Tax Disclosures*. This ASU requires greater disaggregation of information about a reporting entity's effective tax rate reconciliation as well as information on income taxes paid. This ASU applies to all entities subject to income taxes and is intended to help investors better understand an entity's exposure to potential changes in jurisdictional tax legislation and assess income tax information that affects cash flow forecasts and capital allocation decisions. This ASU is effective for annual periods beginning after December 15, 2024, with early adoption permitted. This ASU should be applied on a prospective basis although retrospective application is permitted. The Company is currently evaluating the impact the adoption of this ASU will have on its consolidated financial statements and related disclosures.

In March 2024, the FASB issued ASU No. 2024-02, *Codification Improvements - Amendments to Remove References to the Concepts Statements*, an amendment of the FASB Accounting Standards Codification. The amendments in this ASU are related to the removal of various references to FASB Concept Statements from the codification to make clear distinctions between authoritative and non-authoritative literature in the codification. This ASU is effective for fiscal years beginning after December 15, 2024, with early adoption permitted. The Company does not believe this standard will have an impact on its consolidated financial statements and related disclosures.

In November 2024, the FASB issued ASU 2024-03, *Disaggregation of Income Statement Expenses*, which aims to improve the disclosures about a public business entity's expenses and address requests from investors for more detailed information about the types of expenses in commonly presented expense captions. The guidance is effective for the Company's annual periods beginning in 2027 and interim periods beginning in the first quarter of fiscal year 2028. The Company is currently evaluating the impact of the new guidance.

## 3. Fair Value of Financial Instruments

### Fair Value of Financial Instruments

The Company determines the fair value of its financial instruments based on a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value into three levels:

Level 1 – Observable inputs such as quoted prices in active markets for an identical asset or liability that the Company has the ability to access as of the measurement date. Financial assets and liabilities utilizing Level 1 inputs include money market funds.

Level 2 – Inputs, other than quoted prices included within Level 1, which are directly observable for the asset or liability or indirectly observable through corroboration with observable market data. The Company did not classify any of its investments within Level 2 of the fair value hierarchy.

Level 3 – Unobservable inputs for which there is little or no market data for the asset or liability which requires the reporting entity to develop its own assumptions. The Company did not classify any of its investments within Level 3 of the fair value hierarchy.

The following table sets forth the fair value of the Company's financial assets measured on a recurring basis (in thousands):

| | | December 31, 2024 | | | |
|---|---|---|---|---|---|
| **Assets** | **Classification** | **Level 1** | **Level 2** | **Level 3** | **Total** |
| Money market funds | Cash and cash equivalents | $ 113,776 | $ — | $ — | $ 113,776 |
| Total assets measured at fair value | | $ 113,776 | $ — | $ — | $ 113,776 |

| | | December 31, 2023 | | | |
|---|---|---|---|---|---|
| **Assets** | **Classification** | **Level 1** | **Level 2** | **Level 3** | **Total** |
| Money market funds | Cash and cash equivalents | $ 41,184 | $ — | $ — | $ 41,184 |
| Total assets measured at fair value | | $ 41,184 | $ — | $ — | $ 41,184 |

During the years ended December 31, 2024 and 2023, the Company did not record impairment charges related to its cash equivalents. During the years ended December 31, 2024 and 2023, the Company did not have any transfers between Level 1, Level 2 or Level 3 of the fair value hierarchy. Additionally, the Company did not have any financial liabilities measured on a recurring basis as of December 31, 2024 or 2023.

## 4. Balance Sheet Components

### Property and Equipment, net

Property and equipment, net consisted of the following (in thousands):

| | December 31, | |
|---|---|---|
| | **2024** | **2023** |
| Leasehold improvements | $ 2,519 | $ 2,519 |
| Laboratory equipment | 1,342 | 1,247 |
| Furniture, fixtures and equipment | 966 | 966 |
| Software | 272 | 272 |
| Construction in progress | 29 | — |
| | 5,128 | 5,004 |
| Less: Accumulated depreciation and amortization | (3,968) | (3,476) |
| | $ 1,160 | $ 1,528 |

Depreciation expense for each of the years ended December 31, 2024 and 2023, was $0.5 million, respectively.

**Intangible Assets, net**

Intangible assets primarily consist of a license to utilize certain patents, know-how and technology relating to the Company's NPS for biomedical applications acquired from Old Dominion University Research Foundation (ODURF), Eastern Virginia Medical School (EVMS), and the University of Southern California. In addition, the Company entered into a sponsored research agreement ("SRA") with Old Dominion University's Frank Reidy Research Center for Bioelectrics, a leading research organization in the field, which includes certain intellectual property rights arising from the research. The Company is amortizing the intangible assets over an estimated useful life of 12 years.

Intangible assets, net consisted of the following (in thousands):

| | December 31, | |
|---|---|---|
| | 2024 | 2023 |
| Acquired patents and licenses | $ 7,985 | $ 7,985 |
| Less: Accumulated amortization | (6,765) | (6,099) |
| | $ 1,220 | $ 1,886 |

A schedule of the amortization of intangible assets is as follows (in thousands):

| | |
|---|---|
| Years ending December 31: | |
| 2025 | $ 665 |
| 2026 | 555 |
| | $ 1,220 |

**Accrued Expenses**

Accrued expenses consisted of the following (in thousands):

| | December 31, | |
|---|---|---|
| | 2024 | 2023 |
| Compensation expense | $ 4,097 | $ 3,199 |
| Legal settlement | 1,196 | — |
| Severance | 698 | — |
| Professional fees | 564 | 343 |
| Clinical trial fees and costs | 284 | 84 |
| Other | 188 | 188 |
| | $ 7,027 | $ 3,814 |

**5. Goodwill**

In 2014, the Company acquired three companies (the acquisitions) for aggregate consideration of $5.5 million. In accordance with ASC Topic 805, *Business Combinations*, the Company recorded goodwill of $2.8 million in connection with the acquisitions, which represents the excess of consideration paid over the fair value of net tangible and intangible assets acquired.

The Company reviews goodwill for impairment annually or whenever changes in circumstances indicate that the carrying amount of goodwill may not be recoverable. Based on the Company's annual assessment as of December 31, 2024, the Company determined that its goodwill was not impaired.

**6. Stockholders' Equity and Stock-Based Compensation**

***Preferred Stock***

The Company has authorized a total of 50,000,000 shares of preferred stock, par value $0.001 per share, none of which were outstanding at December 31, 2024 and 2023. The Company's Board of Directors (the "Board") has the authority to issue preferred stock and to determine the rights, preferences, privileges, and restrictions, including voting rights, without any further vote or action by the Company's stockholders.

***Common Stock***

The Company has authorized a total of 500,000,000 shares of common stock, par value $0.001 per share.

***2024 Rights Offering and Subscription Rights***

On March 28, 2024, the Company announced that its Board unanimously approved plans to initiate a rights offering, whereby the Company would distribute non-transferable subscription rights at no charge to all holders of the Company's common stock, par value $0.001 per share (the "Common Stock"), as of the close of business on a record date to be determined. On May 20, 2024, the Company announced that the Board had set May 31, 2024 as the record date (the "Record Date"). All holders of Common Stock as of the Record Date received non-transferable subscription rights to purchase up to an aggregate of six million units (the "2024 Units") with an aggregate offering value of up to $60 million (the "2024 Rights Offering") at a price per 2024 Unit equal to the lesser of: (i) $10 (the "Initial Price") and (ii) the volume weighted average price of the Common Stock for the ten trading day period through and including the expiration date, June 26, 2024 (the "Expiration Date"), of the Rights Offering (the "Alternate Price"). Each subscription right entitled the holder to purchase 0.10864186 2024 Units for each share of Common Stock owned as of the Record Date. Each 2024 Unit consisted of one share of Common Stock and two warrants, each being a warrant to purchase one-half of one share of Common Stock. The subscription rights were to expire and have no value if they were not exercised prior to the Expiration Date. The Company determined that the equity-classified subscription rights represent a pro-rata distribution issued to existing stockholders as of the Record Date, which is based on a purchase price of $10 per 2024 Unit as compared to (1) the price of $11.55 per one share of Common Stock on the Record Date, plus (2) the value of the warrants on the Record Date. The Company determined the fair value of the equity-classified subscription rights as of the Record Date, which involved the use of a Monte Carlo simulation model to value the underlying warrants. The Monte Carlo simulation model was based on certain significant unobservable inputs, such as a risk-free interest rate, stock price volatility, dividend yield, and expected term of the rights offering. The fair value of the equity-classified subscription rights was $47.7 million and was recorded in equity on the balance sheet as part of additional paid-in capital. The deemed pro-rata distribution to shareholders of $47.7 million was reflected as an offsetting reduction in additional paid-in capital. The Company is in an accumulated deficit position and has elected a policy of recognizing the deemed pro-rata distribution to shareholders as a reduction to additional paid-in capital rather than a further increase to its accumulated deficit.

On July 3, 2024, the Company announced the closing of its 2024 Rights Offering. The 2024 Rights Offering resulted in the sale of six million 2024 Units, at a price of $10.00 per 2024 Unit. Each 2024 Unit consisted of one share of the Company's common stock, par value $0.001 per share, and two warrants, each being a warrant to purchase one-half of one share of common stock. The common stock and warrants comprising the 2024 Units separated upon the closing of the 2024 Rights Offering and were issued individually. A total of 5,999,998 shares of common stock and warrants to acquire up to approximately an additional six million shares of common stock were issued in the offering. The Company received aggregate gross proceeds from the 2024 Rights Offering of $60 million. See 2024 Rights Offering Warrants below for additional details of the warrants. Robert W. Duggan, the Company's majority stockholder and Co-Chairman, purchased approximately 88% of the units offered through the 2024 Rights Offering.

***Private Placement Securities Purchase Agreement***

On April 30, 2023, the Company entered into a Securities Purchase Agreement with Robert W. Duggan, the Company's majority stockholder and Co-Chairman, pursuant to which the Company agreed to issue and sell to Mr. Duggan 10,022,937 shares of the Company's common stock, par value $0.001 per share, in a Private Placement, at a price per share of $6.51. The parties completed the Private Placement on May 9, 2023, after satisfying all pre-closing conditions, and the Company issued the full number of shares to Mr. Duggan. The shares were paid for through the cancellation of the principal sum of $65.0 million borrowed by the Company pursuant to the 2022 Loan Agreement (See Note 7), together with all accrued and unpaid interest outstanding owed at the time of closing.

***2022 Rights Offering***

On June 9, 2022, the Company completed a rights offering (the "2022 Rights Offering") resulting in the sale of 7,317,072 units (the "Units"), at a price of $2.05 per Unit, with each Unit consisting of one share of the Company's common stock, par value $0.001 per share, and one warrant (the "2022 Rights Offering Warrants") to purchase one share of common stock at a price of $2.05 per share. The common stock and warrants comprising the Units separated upon the closing of the 2022 Rights Offering and were issued individually. 7,317,072 shares of common stock and warrants to acquire up to an additional 7,317,072 shares of common stock were issued in the 2022 Rights Offering. The Company received aggregate gross proceeds from the 2022 Rights Offering of $15 million. In May 2023, the Company delivered an irrevocable notice of redemption to warrant holders and, on June 16, 2023, it redeemed the last of the outstanding 2022 Rights Offering Warrants at a price of $0.01 per warrant share. See the 2022 Rights Offering Warrants section below for further details. Robert W. Duggan, the Company's majority stockholder and Co-Chairman, purchased approximately 56% of the shares offered through the 2022 Rights Offering.

***Common Stock Warrants***

***2024 Rights Offering Warrants***

In connection with the 2024 Rights Offering, the Company issued 2024 Rights Offering Warrants to purchase a total of 5,999,999 shares of its common stock at an exercise price of $11.00 per whole share, which equaled 110% of the subscription price for the Units. The aggregate number of shares of our common stock issuable upon the exercise of each set of warrants included in a given subscription for Units was rounded up to the nearest whole share. Warrants are exercisable immediately and will expire on the fifth anniversary of the closing of the 2024 Rights Offering. Half of the warrants issued in the rights offering were redeemable for $0.01 per underlying share of common stock, on not less than thirty days' written notice, if the VWAP of the Company's common stock equaled or exceeded 150% of the exercise price for the warrants, or $16.50, for twenty consecutive trading days. In December 2024, the Company delivered an irrevocable notice of redemption to redeem this first tranche of common stock warrants because the VWAP of the Company's common stock over the twenty consecutive trading days before the notice was $18.85. Accordingly, pursuant to the 150% redemption feature, we redeemed 18,221 warrants on the redemption date, February 5, 2025, and none of these warrants are still outstanding. The other half of the warrants issued in the rights offering remain redeemable for $0.01 per underlying share of common stock, on not less than thirty days' written notice, but only if the VWAP of the Company's common stock equals or exceeds 200% of the exercise price for the warrants, or $22.00, for twenty consecutive trading days. As of December 31, 2024, there were 253,246 2024 Rights Offering Warrants outstanding which were subject to the 150% redemption feature and there were 1,245,237 2024 Rights Offering Warrants outstanding which were subject to the 200% redemption feature. As of December 31, 2024, we have received $49.4 million in gross proceeds from exercises of the 2024 Rights Offering Warrants. Refer to Note 13 for disclosure of gross proceeds received subsequent to December 31, 2024.

***2022 Rights Offering Warrants***

In connection with the 2022 Rights Offering, the Company issued 2022 Rights Offering Warrants to purchase a total of 7,317,072 shares of its common stock at an exercise price of $2.05. The 2022 Rights Offering Warrants were subject to redemption by the Company for $0.01 per underlying share of common stock, on not less than 30 days written notice, if the volume weighted average price of the Company's common stock equals or exceeds 200% of the exercise price for the warrants, subject to adjustment, per share, for 20 consecutive trading days, provided that the Company may not redeem the warrants prior to the date that is three months after the issuance date. On May 10, 2023, the Company issued a press release announcing that on May 9, 2023 the terms for warrant redemption had been met. Pursuant to the redemption, the Company redeemed 66,175 warrants on the redemption date, June 16, 2023. Prior to the redemption date, warrants to purchase 7,250,897 shares were exercised, generating approximately $14.9 million of total gross proceeds to the Company. As of December 31, 2024, there were no 2022 Rights Offering Warrants outstanding.

A summary of total warrants activity for the year ended December 31, 2024 is presented below:

| | Number of Shares | Weighted Average Exercise Price | Weighted Average Remaining Contractual Life (in Years) |
|---|---|---|---|
| Warrants outstanding at December 31, 2023 | — | $ — | — |
| Issued | 5,999,999 | 11.00 | |
| Exercised | (4,501,516) | 11.00 | |
| Expired/Redeemed | — | — | |
| Warrants outstanding at December 31, 2024 | 1,498,483 | $ 11.00 | 1.12 |

***Equity Plans***

***2017 Equity Incentive Plan and 2017 Inducement Equity Incentive Plan***

The Board of Directors of the Company (the "Board") previously adopted, and the Company's stockholders approved, the Company's 2017 Equity Incentive Plan (the "2017 Plan").

The 2017 Plan has a 10-year term, and provides for the grant of stock options, stock appreciation rights, restricted stock, RSUs, performance units, and performance shares to employees, directors and consultants of the Company and any parent or subsidiary of the Company, as the Compensation Committee of the Board may determine. Subject to an annual evergreen increase and adjustment in the case of certain capitalization events, the Company initially reserved 1,500,000 shares of the Company's common stock for issuance pursuant to awards under the 2017 Plan. In addition, shares remaining available under the Company's 2015 Equity Incentive Plan, as amended (the "2015 Plan"), and shares reserved but not issued pursuant to outstanding equity awards that expire or terminate without being exercised or that are forfeited or repurchased by the Company will be added to the shares of common stock available for issuance under the 2017 Plan. The 2017 Plan is administered by the Board's Compensation Committee. Effective at both January 1, 2024 and 2023, the number of shares of common stock available under the 2017 Plan increased by 1,200,000, respectively, pursuant to the evergreen provision of the 2017 Plan. Under the evergreen provision of the 2017 Plan, the share increase is determined based on the least of (i) 1,200,000 shares, (ii) 4% of the Company's common stock outstanding at December 31 of the immediately preceding year, or (iii) such number of shares as determined by the Board. Additionally, in December 2023, the number of shares of common stock available under the 2017 Plan increased by 1,375,000 shares as a result of a stockholder vote held at a special meeting of stockholders. As of December 31, 2024, 77,490 shares of common stock remained available for issuance under the 2017 Plan.

During November 2017, the Board of the Company adopted the 2017 Inducement Equity Incentive Plan (the "Inducement Plan") and reserved 1,000,000 shares of the Company's common stock for issuance pursuant to equity awards granted under the Inducement Plan. The Inducement Plan was adopted without stockholder approval.

The Inducement Plan has a 10-year term and provides for the grant of equity-based awards, including non-statutory stock options, RSUs, restricted stock, stock appreciation rights, performance shares and performance units, and its terms are substantially similar to the 2017 Plan, including with respect to treatment of equity awards in the event of a "merger" or "change in control" as defined under the Inducement Plan. Options issued under the Inducement Plan may have a term up to ten years and have variable vesting provisions. New hire grants generally vest 25% per year starting upon the first anniversary of the grant. Equity-based awards issued under the Inducement Plan are only issuable to individuals not previously engaged as employees or non-employee directors of the Company prior to the Inducement Plan's adoption date. In May 2021, the Board approved an amendment to the Inducement Plan to reserve an additional 1,000,000 shares of the Company's common stock for issuance pursuant to the Inducement Plan. And, in March 2024, the Board approved a second amendment to the Inducement Plan to reserve an additional 2,000,000 shares of the Company's common stock for issuance pursuant to the Inducement Plan. As of December 31, 2024, 2,941,626 shares of common stock were available for issuance under the Inducement Plan.

A summary of stock option activity under the 2015 Plan, 2017 Plan and Inducement Plan for the year ended December 31, 2024 is presented below:

| | Stock Options Outstanding | | |
|---|---|---|---|
| | Number of shares | Weighted average exercise price | Weighted average remaining life (in years) |
| Balances — December 31, 2023 | 9,466,036 | $ 9.01 | 7.78 |
| Options granted | 3,018,643 | 10.38 | |
| Options exercised | (160,847) | 5.41 | |
| Options canceled | (1,308,542) | 7.51 | |
| Options expired | (35,958) | 19.82 | |
| Balances — December 31, 2024 | 10,979,332 | $ 9.59 | 7.11 |
| Exercisable — December 31, 2024 | 4,525,945 | $ 12.74 | 4.98 |

*Time-based Options*

The Company awards time-based options which vest and become exercisable, subject to the individual's continued employment or service through the applicable vesting date. Time-based options can have various vesting schedules, most commonly new hire grants which generally vest 25% per year starting upon the first anniversary of the grant.

A summary of the time-based stock option activity under the 2015 Plan, 2017 Plan and Inducement Plan for the year ended December 31, 2024 is presented below:

| | Stock Options Outstanding | | |
|---|---|---|---|
| | Number of shares | Weighted average exercise price | Weighted average remaining life (in years) |
| Balances — December 31, 2023 | 6,141,906 | $ 10.48 | 7.07 |
| Options granted | 2,124,643 | 11.31 | |
| Options exercised | (150,897) | 5.57 | |
| Options canceled | (605,542) | 7.59 | |
| Options expired | (34,958) | 20.30 | |
| Options modified from performance-based to time-based | 600,113 | 4.18 | |
| Balances — December 31, 2024 | 8,075,265 | $ 10.49 | 6.72 |
| Exercisable — December 31, 2024 | 4,093,267 | $ 13.27 | 4.80 |

The intrinsic value of time-based options exercised during the years ended December 31, 2024 and 2023 was $1.9 million and $0.9 million, respectively.

The fair value of the time-based options granted to employees and directors during the years ended December 31, 2024 and 2023 was $18.7 million and $9.0 million, respectively.

*Time-based Modifications*

In October 2024, the Board approved changes to the performance-based vesting conditions of certain unvested outstanding common stock option awards that were improbable of vesting. Specifically, 600,113 performance-based stock option awards were modified to time-based vesting criteria. The modified time-based awards will vest and become exercisable, subject to the individual's continued employment or service through the applicable vesting date, based upon individually specific vesting schedules with annual vesting milestones. The vesting schedules have a range from two to four years. The fair value of the time-based modification awards at the modification date was $8.8 million. As a result of this modification, the Company recognized an additional $2.9 million of stock-based compensation expense during the year ended December 31, 2024.

*Performance Options*

Certain stock options awarded to the Company's executives and other employees contain performance conditions related to certain financial measures and achievements of strategic and operational milestones. The options will vest and become exercisable once the specific performance condition is fulfilled. In October 2024, the Board approved changes to the performance-based vesting conditions of certain unvested outstanding common stock option awards that were improbable of vesting. Specifically, certain performance-based stock option awards were changed to time-based vesting criteria and certain performance-based stock option awards were changed to market-based vesting criteria.

A summary of the performance option activity under the 2017 Plan and Inducement Plan for the year ended December 31, 2024 is presented below:

| | Stock Options Outstanding | | |
|---|---|---|---|
| | Number of shares | Weighted average exercise price | Weighted average remaining life (in years) |
| Balances — December 31, 2023 | 1,224,130 | $ 5.51 | 8.53 |
| Options granted | 39,000 | 8.44 | |
| Options exercised | (9,950) | 2.92 | |
| Options canceled | (3,000) | 2.92 | |
| Options expired | (1,000) | 2.92 | |
| Options modified from performance-based to time-based and market-based | (806,502) | 4.49 | |
| Balances — December 31, 2024 | 442,678 | $ 7.71 | 6.79 |
| Exercisable — December 31, 2024 | 432,678 | $ 7.69 | 6.73 |

The fair value of the performance options granted to employees during the years ended December 31, 2024 and 2023 was $0.3 million and $2.0 million, respectively.

The Company estimates the fair value of time-based and performance-based stock options on the grant date and modification date using the Black-Scholes option pricing model. The estimated fair value of these employee stock options is amortized on a straight-line basis over the requisite service period of the awards. The Company reviews, and when deemed appropriate, updates the assumptions used on a periodic basis. The fair value of time-based and performance-based stock options was estimated using the following weighted-average assumptions:

| | Year Ended December 31, | |
|---|---|---|
| | 2024 | 2023 |
| Expected term in years | 2.9 - 6.3 | 5.0 - 8.0 |
| Expected volatility | 91% - 99% | 89% - 95% |
| Risk-free interest rate | 3.8% - 4.5% | 3.7% - 4.4% |
| Dividend yield | — | — |

*Market-based Options*

Certain stock options awarded by the Company contain market conditions related to achievement of certain market capitalization targets. The options will vest and become exercisable once the specific market capitalization target is fulfilled.

A summary of the market-based option activity under the 2017 Plan for the year ended December 31, 2024 is presented below:

| | Stock Options Outstanding | | |
|---|---|---|---|
| | Number of shares | Weighted average exercise price | Weighted average remaining life (in years) |
| Balances — December 31, 2023 | 2,100,000 | $ 6.78 | 9.44 |
| Options granted | 855,000 | 8.16 | |
| Options exercised | — | — | |
| Options canceled | (700,000) | 7.45 | |
| Options expired | — | — | |
| Options modified from performance-based to market-based | 206,389 | 5.39 | |
| Balances — December 31, 2024 | 2,461,389 | $ 6.95 | 8.43 |
| Exercisable — December 31, 2024 | — | — | — |

The fair value of the market-based options granted to employees during the years ended December 31, 2024 and 2023 was $5.3 million and $10.5 million, respectively.

*Market-based Modifications*

In October 2024, the Board approved changes to the performance-based vesting conditions of certain unvested outstanding common stock option awards that were improbable of vesting. Specifically, 206,389 performance-based stock option awards were modified to market-based vesting criteria. The modified market-based awards will vest and become exercisable, subject to the individual's continued employment and service through the applicable vesting date, based upon the achievement of certain market capitalization targets. The fair value of these market-based modification awards at the modification date was $2.8 million. Additionally, in October 2024, the Board approved a modification to certain market-based awards to adopt a uniform methodology for calculating its market capitalization whereas they aligned all awards to use consecutive calendar days and not consecutive trading days in the calculation. As a result of this modification, incremental value of $0.4 million will be recognized over the remaining derived service period.

The Company estimates the fair value of market-based stock options on the grant date and modification date using a Monte Carlo simulation model. The estimated fair value of these employee stock options is amortized over the requisite service period for each tranche of the awards. The requisite service period is the service period derived from the Monte Carlo simulation model. If the market capitalization targets are met sooner than the derived service period, the Company will accelerate the recognition of stock-based compensation expense to reflect the cumulative expense associated with the vested shares. The fair value of market-based stock options was estimated using the following weighted-average assumptions:

| | Year Ended December 31, | |
|---|---|---|
| | **2024** | **2023** |
| Expected term in years | 1.4 - 4.3 | 4.0 - 6.3 |
| Expected volatility | 90% | 90% |
| Risk-free interest rate | 3.5% - 3.7% | 3.4% - 3.8% |
| Dividend yield | — | — |

***2017 Employee Stock Purchase Plan***

The Board previously adopted and the stockholders approved the Company's 2017 Employee Stock Purchase Plan (the "2017 ESPP").

The 2017 ESPP is a broad-based plan that provides employees of the Company and its designated affiliates with the opportunity to become stockholders through periodic payroll deductions that are applied towards the purchase of Company common shares at a discount from the then-current market price. Subject to adjustment in the case of certain capitalization events, a total of 250,000 common shares of the Company were available for purchase at adoption of the 2017 ESPP. Pursuant to the 2017 ESPP, the annual share increase pursuant to the evergreen provision is determined based on the least of (i) 450,000 shares, (ii) 1.5% of the Company's common stock outstanding at December 31 of the immediately preceding year, or (iii) such number of shares as determined by the Board. In 2024, the Company reserved an additional 450,000 shares under the 2017 ESPP pursuant to the evergreen provision. In 2023, the Board waived the evergreen provision and no additional shares were reserved under the 2017 ESPP. During the years ended December 31, 2024 and 2023, the Company issued 117,539 and 347,681 shares of common stock under the 2017 ESPP, respectively. As of December 31, 2024, 445,779 shares of common stock remained available for issuance under the 2017 ESPP.

The Company estimates the fair value of ESPP grants on their grant date using the Black-Scholes option pricing model. The estimated fair value of ESPP grants is amortized on a straight-line basis over the requisite service period of the grants. The Company reviews, and when deemed appropriate, updates the assumptions used on a periodic basis. The Company utilizes its estimated volatility in the Black-Scholes option pricing model to determine the fair value of ESPP grants. The fair value of ESPP grants was estimated using the following weighted-average assumptions:

| | Year Ended December 31, | |
|---|---|---|
| | **2024** | **2023** |
| Expected term in years | 0.5 - 1.0 | 0.5 - 1.0 |
| Expected volatility | 98% | 83% |
| Risk-free interest rate | 4.4% - 5.3% | 5.1% - 5.5% |
| Dividend yield | — | — |

***Stock-based Compensation***

In October 2024, the Board approved changes to the performance-based vesting conditions of certain unvested outstanding common stock option awards that were improbable of vesting. Specifically, certain performance-based stock option awards were modified to time-based vesting criteria and certain performance-based stock option awards were modified to market-based vesting criteria. This modification resulted in approximately $3.2 million of additional stock-based compensation expense for the year ended December 31, 2024.

Total stock-based compensation expense recorded in the consolidated statements of operations and comprehensive loss was as follows (in thousands):

| | Year Ended December 31, | |
|---|---|---|
| | **2024** | **2023** |
| Research and development | 6,293 | 3,491 |
| General and administrative | 7,293 | 3,690 |
| Total stock-based compensation expense | $ 13,586 | $ 7,181 |

As of December 31, 2024, not all of the performance conditions of the performance options are probable to be achieved. Compensation expense has only been recognized for those conditions that are assumed to be probable.

Total stock-based compensation expense by award type was as follows (in thousands):

| | Year Ended December 31, | |
|---|---|---|
| | **2024** | **2023** |
| Time-based options | $ 10,343 | $ 3,827 |
| Performance-based options | 38 | 1,977 |
| Market-based options | 2,926 | 1,130 |
| ESPP | 279 | 247 |
| Total stock-based compensation expense | $ 13,586 | $ 7,181 |

Total time-based stock-based compensation expense for the year ended December 31, 2024, includes $2.9 million of additional expense due to the modification of certain performance-based stock option awards to time-based stock option awards, and $0.7 million of additional expense, net of forfeiture of unvested options that were previously expensed for $0.6 million, due to the modification of a certain award whereby there was a partial acceleration of vesting upon the departure of the Company's former Chief Executive Officer.

At December 31, 2024, there was $34.8 million of unrecognized compensation cost related to unvested stock-based compensation arrangements, which is expected to be recognized over a weighted average period of 2.85 years.

**7. Commitments and Contingencies**

***2022 Loan Agreement***

On September 20, 2022, the Company and Robert W. Duggan, the Company's majority stockholder and Co-Chairman, entered into a Loan Agreement ("2022 Loan Agreement") in connection with Mr. Duggan lending the principal sum of $65.0 million to the Company. The 2022 Loan Agreement bore interest at a rate per annum equal to 5.0%, payable quarterly commencing on January 1, 2023, with the principal sum payable on March 20, 2024. On March 17, 2023, the Company and Mr. Duggan amended certain terms of the 2022 Loan Agreement. There were no changes to the interest rate, but the principal sum repayment date was changed to September 30, 2024. During the year ended December 31, 2023, the Company made cash payments of $1.7 million for accrued interest on the loan, and recorded an additional $1.1 million of interest expense in relation to the 2022 Loan Agreement. On April 30, 2023, the Company entered into a Securities Purchase Agreement with Mr. Duggan, pursuant to which the Company agreed to issue and sell to Mr. Duggan 10,022,937 shares of the Company's common stock, par value $0.001 per share, in a Private Placement, at a price per share of $6.51. These shares were paid for through the cancellation of the amounts then owed by the Company under the 2022 Loan Agreement, the principal sum of $65.0 million and all accrued and unpaid interest outstanding, which totaled approximately $0.2 million as of April 30, 2023. The parties completed the Private Placement on May 9, 2023 and, upon closing and satisfaction of the outstanding debt, the 2022 Loan Agreement terminated, without early termination fees or penalties being owed by the Company. There were no additional amounts are owed to Mr. Duggan under the 2022 Loan Agreement at December 31, 2024 and 2023.

***Operating Leases***

*Hayward Lease*

In January 2017, the Company entered into a five-year lease (the "Existing Lease") for approximately 15,700 square feet for its principal operating facility located in Hayward, California. The lease commenced during July 2017. In May 2019, the Company entered into Lease Amendment 1 (the "Lease Amendment") in relation to the Existing Lease and added the lease of new premises of approximately 13,300 square feet and 21,300 square feet, ("Expansion Premises 1" and "Expansion Premises 2," respectively). Additionally, the term of the Existing Lease was extended to October 2029 to be coterminous with Expansion Premises 1 and Expansion Premises 2. The Company evaluated the lease amendment under the provisions of ASC 842. It concluded that the Lease Amendment would be accounted for as a single contract with the Existing Lease because the additional lease payments due to the Lease Amendment was not commensurate with the right-of-use ("ROU") asset granted to the Company. Though the Lease Amendment was accounted for as a single contract, the Existing Premises, Expansion Premises 1 (occupied in November 2019) and Expansion Premises 2 (occupied in May 2020) are accounted for as separate lease components. Accordingly, the Company measured and allocated consideration to each lease component as of the modification date.

*Miami Lease*

In November 2024, the Company entered into a 65-month lease for approximately 2,000 square feet for its corporate headquarters located in Miami, Florida, which commenced on November 8, 2024. The lease contains one five-year extension option, however, as of the lease commencement date, the Company has determined that it is not reasonably certain to exercise the option to extend the lease and has not included the extension period in the lease term. The monthly lease payment is approximately $0.02 million with annual escalation of approximately 3%. Variable lease costs are comprised primarily of the Company's proportionate share of operating expenses, property taxes, and insurance. Operating lease ROU assets and liabilities on our balance sheet are based on the net present value of the remaining lease payments over the remaining lease term. As the lease did not provide an implicit rate, the Company used its incremental borrowing rate based on the information available in determining the present value of lease payments. The Company's incremental borrowing rate of 8% was based on the term of the lease, the economic environment of the lease, and reflects the rate the Company would have had to pay to borrow on a secured basis. The Company recorded a ROU asset and lease liability upon lease commencement in the amount of $0.8 million.

During the years ended December 31, 2024 and 2023, total rent expense, including common area maintenance charges, was $2.5 million and $2.3 million, respectively. The variable portion of the lease costs included in the totals were immaterial for the years ended December 31, 2024 and 2023.

Supplemental balance sheet information related to leases (in thousands):

| | Year Ended December 31, | |
|---|---|---|
| **Assets:** | **2024** | **2023** |
| Operating right-of-use assets | $ 7,163 | $ 7,256 |

| | Year Ended December 31, | |
|---|---|---|
| **Liabilities:** | **2024** | **2023** |
| Lease liability, current | $ 1,355 | $ 1,058 |
| Lease liability, less current portion | 7,543 | 8,086 |
| Total lease liabilities | $ 8,898 | $ 9,144 |

Total cash paid for operating lease liabilities (in thousands):

| | Year Ended December 31, | |
|---|---|---|
| | **2024** | **2023** |
| Cash paid for operating lease liabilities | $ 1,938 | $ 1,845 |

Maturities of total operating lease liabilities were as follows (in thousands):

| | | |
|---|---|---|
| Year ending December 31: | | |
| 2025 | $ | 2,151 |
| 2026 | | 2,225 |
| 2027 | | 2,302 |
| 2028 | | 2,381 |
| 2029 | | 2,080 |
| Thereafter | | 73 |
| Total lease payments | | 11,212 |
| Less imputed interest | | (2,314) |
| Total lease liabilities | $ | 8,898 |

Weighted-average remaining lease term and discount rate for both the Hayward Lease and Miami Lease, as of December 31, 2024, were as follows:

| | |
|---|---|
| Weighted-average remaining lease term | 4.88 |
| Weighted-average discount rate | 9.8% |

***Legal Proceedings***

From time to time, we may be involved in various legal proceedings arising in the ordinary course of business. Having resolved our earlier dispute with our former Chief Financial Officer, we are not presently a party to any legal proceedings that, in the opinion of management, could have a material adverse effect on our results of operations or financial condition. Regardless of outcome, however, any litigation could have an adverse impact on us because of defense and settlement costs, diversion of management resources, negative publicity, reputational harm, and other factors.

**8. Income Taxes**

Income (loss) before income taxes (in thousands):

| | Year Ended December 31, | |
|---|---|---|
| | 2024 | 2023 |
| Domestic | $ (53,585) | $ (42,210) |
| Foreign | — | — |
| | $ (53,585) | $ (42,210) |

The Company has not recorded any income tax expenses in the Consolidated Statements of Operations and Comprehensive Loss for the years ended December 31, 2024 and 2023.

The provision for income taxes differs from the amount estimated by applying the statutory federal income tax rate to income (loss) before taxes as follows:

| | Year Ended December 31, | |
|---|---|---|
| | 2024 | 2023 |
| Federal tax at statutory rate | 21.0% | 21.0% |
| Research and development credits | 2.2 | 3.7 |
| Return to provision | (0.3) | 2.6 |
| Change in valuation allowance | (21.8) | (19.1) |
| Deferred adjustment | — | (1.6) |
| Change in tax rate | — | (5.8) |
| Other | (1.1) | (0.8) |
| Provision for income taxes | —% | —% |

Deferred income taxes reflect the impact of carryforwards and temporary differences between the amounts of assets and liabilities for financial reporting purposes and such amounts as measured by tax laws. The carryforwards and temporary differences, which give rise to a significant portion of the Company's deferred tax asset (liability) as of December 31, 2024 and 2023, are as follows (in thousands):

| | December 31, | |
|---|---|---|
| | 2024 | 2023 |
| **Deferred tax assets** | | |
| Accruals | $ 1,218 | $ 1,502 |
| Net operating loss carryforwards | 66,952 | 61,072 |
| Tax credit carryforwards | 10,838 | 9,815 |
| Stock-based compensation | 9,588 | 7,704 |
| R&D capitalization | 10,358 | 7,384 |
| Lease liability | 1,869 | 1,920 |
| Property and equipment | 35 | 7 |
| Intangible assets | 279 | 99 |
| Gross deferred tax assets | 101,137 | 89,503 |
| Valuation allowance | (99,542) | (87,853) |
| Total deferred tax assets | 1,595 | 1,650 |
| | | |
| **Deferred tax liabilities** | | |
| Right-of-use assets | (1,595) | (1,650) |
| Total deferred tax liabilities | (1,595) | (1,650) |
| | | |
| Net deferred tax assets/(liabilities) | $ — | $ — |

The Company's unrecognized tax benefits as of December 31, 2024 and 2023 were $17.4 million and $10.2 million, respectively. If recognized, none of the unrecognized tax benefits would impact income tax expense to the extent that the Company continues to maintain a full valuation allowance against its deferred tax assets.

A reconciliation of the beginning and ending amounts of unrecognized tax benefit is as follows (in thousands):

| | December 31, | |
|---|---|---|
| | 2024 | 2023 |
| Unrecognized tax benefits at beginning of year | $ 10,170 | $ 8,925 |
| Increases related to current year tax positions | 4,366 | 1,575 |
| Increases related to prior year tax positions | 2,993 | 1,129 |
| Decreases related to prior year tax positions | (153) | (1,459) |
| Unrecognized tax benefits at end of year | $ 17,376 | $ 10,170 |

The Company's policy is to recognize interest and penalties related to income taxes as components of interest expense and other expense, respectively. The Company did not accrue interest and penalties related to unrecognized tax benefits as of December 31, 2024 and does not anticipate any significant change within twelve months of this reporting date.

The Company's valuation allowance increased by $11.7 million in the year ended December 31, 2024 and increased by $8.1 million in the year ended December 31, 2023.

As of December 31, 2024, the Company had federal and state net operating loss ("NOL") carryforwards of $250.0 million and $274.3 million, respectively, which begin to expire in 2034. Of the total federal NOL carryforward of $250.0 million, approximately $224.4 million is carried forward indefinitely but is limited to 80% of the taxable income.

As of December 31, 2024, the Company had approximately $9.5 million and $9.3 million of U.S. federal and California research and development ("R&D") credits, respectively. The federal R&D credits begin to expire in 2035 and the California R&D credits have an indefinite carryforward period.

The Company is subject to taxation in the United States for Federal and for State, within various states in which the Company operates. All jurisdictions and tax years currently remain open for IRS and state taxing authorities' examination. As of December 31, 2024, the Company was not under examination by the Internal Revenue Service or any state tax jurisdiction.

Internal Revenue Code Section 382 ownership change generally occurs if one or more stockholders or groups of stockholders who own at least 5% of our stock increase their ownership by more than 50 percentage points over their lowest ownership percentage within a rolling three-year period. Similar rules may apply under state tax laws. We believe that we have had one or more ownership changes prior to 2018, but recently performed a Section 382 study to analyze fiscal years 2018 through 2024, and we do not believe that we have had any additional ownership changes over that period. Possible future changes in our stock ownership could result in limitations.

**9. Segment Reporting**

Operating segments are defined as components of an enterprise about which separate discrete information is available for evaluation by the chief operating decision-maker (the "CODM"), in deciding how to allocate resources and assess performance. The Company has one operating and reportable segment relating to the research and development of the Company's NPS technology. The CODM views the Company's operations and manages its business in one operating segment. The CODM uses the Company's consolidated net loss to monitor actual results as compared to the budget in assessing segment performance and allocation of resources. Managing and allocating resources on an entity-wide basis enables the CODM to assess the overall level of resources available and how to best deploy these resources across functions and research and development projects that are in line with the Company's long-term company-wide strategic goals. Consistent with this decision-making process, the CODM uses financial information for purposes of evaluating performance, forecasting future period financial results, allocating resources, and setting incentive targets. Operating expenses are used to monitor budget versus actual results. The CODM is regularly provided with more detailed expense information than what is included in our Consolidated Statement of Operations and Comprehensive Loss. Throughout 2024, the CODM of the Company changed multiple times, however the financial information that was reviewed by each of the CODMs did not change throughout the year. The table below shows a reconciliation of the Company's net loss, including the significant expense categories regularly provided to and reviewed by the CODM, as computed under U.S. GAAP to the Company's total net loss in the statements of operations (in thousands).

| | Year Ended December 31, | |
|---|---|---|
| | 2024 | 2023 |
| Total revenues | $ — | $ — |
| Cross platform research and engineering[1] | 13,487 | 15,742 |
| Manufacturing[2] | 4,939 | 2,278 |
| Clinical and regulatory[3] | 4,052 | 2,737 |
| Adjusted general and administrative[4] | 15,909 | 13,317 |
| Sales and marketing[5] | 3,106 | 1,113 |
| Other segment items[6] | 14,764 | 8,387 |
| Total other income, net | (2,672) | (1,364) |
| Net loss | $ (53,585) | $ (42,210) |

1 Cross platform research and engineering includes compensation costs, fees paid to consultants and outside service providers and organizations, prototype spending and other expenses relating to the acquisition, design and development of the Company's clinical stage devices.
2 Manufacturing includes compensation costs, fees paid to consultants and outside service providers and organizations, and costs associated with the procurement of materials and the manufacturing of the Company's clinical stage devices.
3 Clinical and regulatory includes compensation costs, fees paid to consultants and outside service providers and organizations, and costs associated with clinical trials and regulatory approvals required for the development of the Company's clinical stage devices.
4 Adjusted general and administrative includes compensation costs and fees paid to consultants and outside service providers and organizations in support of the administrative functions of the Company, including finance, legal and human resources.
5 Sales and marketing includes compensation costs, fees paid to consultants and outside service providers and organizations, costs associated with marketing and sales strategy as well as execution of marketing and sales initiatives for the Company's products.
6 Other segment items includes stock-based compensation, depreciation and amortization, and facilities and IT costs allocations.

As of December 31, 2024 and 2023, all of the Company's long-lived assets are located in the United States.

**10. Related Party Transactions**

In May 2022, the Company determined not to renew its annual director and officer liability insurance policy due to disproportionately high premiums quoted by insurance companies. Instead, on May 31, 2022, the Company and Robert W. Duggan, majority stockholder and Co-Chairman, entered into a letter agreement (the "Letter Agreement") pursuant to which Mr. Duggan agreed with the Company to personally provide indemnity coverage for a one-year period, and he agreed to deposit cash and/or marketable securities into a third-party escrow, as security for these obligations, if requested by the Company. On May 31, 2023, the last day of the one-year period, the Company paid Mr. Duggan a fee of $1.0 million in consideration of the obligations set forth in the Letter Agreement. As of December 31, 2024, there were no additional amounts owed to Mr. Duggan under the Letter Agreement.

On June 9, 2022, the Company completed the 2022 Rights Offering resulting in the sale of 7,317,072 Units, at a price of $2.05 per Unit, with each Unit consisting of one share of the Company's common stock, par value $0.001 per share, and one 2022 Rights Offering Warrant to purchase one share of common stock at a price of $2.05 per share. Robert W. Duggan, the Company's majority stockholder and Co-Chairman, purchased approximately 56% of the shares offered through the 2022 Rights Offering. See Note 6 for further details.

On September 20, 2022, the Company and Robert W. Duggan, the Company's majority stockholder and Co-Chairman, entered into the 2022 Loan Agreement in connection with Mr. Duggan lending the principal sum of $65.0 million to the Company. On April 30, 2023, the Company entered into a Securities Purchase Agreement with Mr. Duggan, pursuant to which the Company agreed to issue and sell to Mr. Duggan 10,022,937 shares of the Company's common stock, par value $0.001 per share, in a Private Placement, at a price per share of $6.51. These shares were paid for through the cancellation of the amounts then owed by the Company under the 2022 Loan Agreement, the principal sum of $65.0 million and all accrued and unpaid interest outstanding, which totaled approximately $0.2 million as of April 30, 2023. Upon closing of the Private Placement and satisfaction of the outstanding debt, the 2022 Loan Agreement terminated, without early termination fees or penalties being owed by the Company. No additional amounts are owed to Mr. Duggan under the 2022 Loan Agreement. See Note 7 for further details.

On July 3, 2024, the Company announced the closing of its 2024 Rights Offering. The 2024 Rights Offering resulted in the sale of six million 2024 Units, at a price of $10.00 per 2024 Unit. Each 2024 Unit consisted of one share of the Company's common stock, par value $0.001 per share, and two warrants, each being a warrant to purchase one-half of one share of common stock. The common stock and warrants comprising the 2024 Units separated upon the closing of the 2024 Rights Offering and were issued individually. A total of 5,999,998 shares of common stock and warrants to acquire up to approximately an additional six million shares of common stock were issued in the offering. The Company received aggregate gross proceeds from the 2024 Rights Offering of $60 million. Robert W. Duggan, the Company's majority stockholder and Co-Chairman, purchased approximately 88% of the units offered through the 2024 Rights Offering. See Note 6 for further details.

**11. Restructuring Charges**

In February 2023, the Company eliminated seven positions and incurred a discrete restructuring related charge of $0.1 million which was fully recorded in February 2023 and the related expenses are included within total cost and expenses on the condensed consolidated statement of operations for the year ended December 31, 2023. This charge represents the total amount incurred in connection with the activity. The Company did not incur any restructuring related charges in the year ended December 31, 2024.

**12. Employee Benefit Plans**

The Company sponsors a defined contribution plan under which it may make discretionary contributions. The Company did not make any employer matching contributions to this plan during the years ended December 31, 2024 and 2023

**13. Subsequent Events**

***2024 Rights Offering Warrants***

Half of the warrants issued in the Company's 2024 Rights Offering were redeemable for $0.01 per underlying share of common stock, on not less than thirty days' written notice, if the VWAP of the Company's common stock equaled or exceeded 150% of the exercise price for the warrants, or $16.50, for twenty consecutive trading days. In December 2024, the Company delivered an irrevocable notice of redemption to redeem the 2024 Rights Offering Warrants which were subject to this 150% redemption feature, because the VWAP of the Company's common stock over the twenty consecutive trading days before the notice was $18.85. Pursuant to the 150% redemption feature, the Company redeemed 18,221 warrants on the redemption date, February 5, 2025, and at the date of this filing, there are no 2024 Rights Offering Warrants subject to the 150% redemption feature outstanding. Subsequent to December 31, 2024, but prior to the redemption date of February 5, 2025, the Company received approximately $2.6 million in gross proceeds from exercises of the 150% redemption feature 2024 Rights Offering Warrants.

The other half of the warrants issued in the 2024 Rights Offering remain redeemable by the Company for $0.01 per underlying share of common stock, on not less than thirty days' written notice, if the VWAP of the Company's common stock equals or exceeds 200% of the exercise price for the warrants, or $22.00, for twenty consecutive trading days. Although the 200% redemption feature of the 2024 Rights Offering Warrants has not yet been triggered, since December 31, 2024, the Company has received approximately $11.4 million in gross proceeds from exercises of warrants subject to the 200% redemption feature. If exercised, an additional $2.3 million of gross proceeds may be received if the remaining outstanding 2024 Rights Offering Warrants subject to the 200% redemption feature are exercised.

As of January 2, 2025, Robert W. Duggan, the Company's majority stockholder and Co-Chairman, has exercised all of his outstanding 2024 Rights Offering Warrants. He has zero 150% redemption feature and zero 200% redemption feature warrants outstanding as of the date of this filing.

***Executive Appointments***

In January 2025, the Company appointed Paul A. LaViolette, the Company's Co-Chairman, as Chief Executive Officer and President of the Company. In connection with his appointment, the Company awarded Mr. LaViolette stock options to purchase up to 1,500,000 shares of the Company's common stock, with an exercise price of $18.43 per share, the closing price of the Company's common stock on January 8, 2025, the last trading day preceding Mr. LaViolette's employment start date and date of grant. Subject to certain accelerated vesting provisions, 450,000 option shares will vest over four years, subject to a time-based vesting schedule, and 1,050,000 option shares will vest subject to both market and performance conditions related to achievement of certain market capitalization and revenue and gross margin targets. The options will vest and become exercisable once the specific targets are fulfilled.

In February 2025, the Company appointed Jon Skinner as Chief Financial Officer of the Company. In connection with his appointment, the Company awarded Mr. Skinner stock options to purchase up to 300,000 shares of the Company's common stock, with an exercise price of $20.93 per share, the closing price of the Company's common stock on January 31, 2025, the last trading day preceding Mr. Skinner's employment start date and date of grant. Subject to certain

accelerated vesting provisions, 150,000 option shares will vest over four years, subject to a time-based vesting schedule, and 150,000 option shares will vest subject to both market and performance conditions related to achievement of certain market capitalization and revenue targets. The options will vest and become exercisable once the specific targets are fulfilled.

**Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure**

None.

**Item 9A. Controls and Procedures**

**Evaluation of Disclosure Controls and Procedures**

Our management, under the supervision and with the participation of our Chief Executive Officer and our Chief Financial Officer, our principal executive and principal financial officers, respectively, conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act of 1934, as amended, as of the end of the period covered by this Annual Report on Form 10-K. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures were effective (a) to ensure that information that we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms and (b) to include, without limitation, controls and procedures designed to ensure that information required to be disclosed by us in reports filed or submitted under the Exchange Act is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

**Management's Annual Report on Internal Control Over Financial Reporting**

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Rule 13a-15(f) under the Exchange Act. Under the supervision and with the participation of senior management, including our Chief Executive Officer, Chief Financial Officer, and Corporate Controller, we evaluated the effectiveness of our internal control over financial reporting based on the framework in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on the evaluation under that framework and applicable SEC rules, our management concluded that our internal control over financial reporting was effective as of December 31, 2024.

**Changes in Internal Control Over Financial Reporting**

There were no changes in our internal controls over financial reporting during the year ended December 31, 2024, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

**Inherent Limitations on Effectiveness of Controls**

Our management does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of a simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by management override of the controls. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions; over time, controls may become inadequate because of changes in conditions, or the degree of compliance with policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

**Item 9B. Other Information**

None.

**Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections**

Not Applicable.

## PART III

### Item 10. Directors, Executive Officers and Corporate Governance

Information responsive to this item is incorporated herein by reference to our definitive proxy statement with respect to our 2025 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

### Item 11. Executive Compensation

Information responsive to this item is incorporated herein by reference to our definitive proxy statement with respect to our 2025 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

### Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Information responsive to this item is incorporated herein by reference to our definitive proxy statement with respect to our 2025 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

### Item 13. Certain Relationships and Related Transactions, and Director Independence

Information responsive to this item is incorporated herein by reference to our definitive proxy statement with respect to our 2025 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

### Item 14. Principal Accounting Fees and Services

Information responsive to this item is incorporated herein by reference to our definitive proxy statement with respect to our 2025 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

## Part IV

**Item 15. Exhibits, Financial Statement Schedules**

(a) The following documents are filed as part of, or incorporated by reference into, this Annual Report on Form 10-K:

1. *Financial Statements*: See Item 8 of this Annual Report on Form 10-K.

2. *Financial Statement Schedules*: All schedules are omitted because they are not required, are not applicable or the information is included in the consolidated financial statements or notes thereto.

(b) The following exhibits are filed as part of, or incorporated by reference into, this Annual Report on Form 10-K:

| Exhibit Number | Exhibit Description | Incorporation by Reference | | | |
|---|---|---|---|---|---|
| | | Form | File No. | Exhibit(s) | Filing Date |
| 2.1 | Plan of Conversion of Pulse Biosciences, Inc. | 8-K12B | 001-37744 | 2.1 | June 18, 2018 |
| 3.1 | Articles of Conversion | 8-K12B | 001-37744 | 3.1 | June 18, 2018 |
| 3.2 | Certificate of Conversion | 8-K12B | 001-37744 | 3.2 | June 18, 2018 |
| 3.3 | Certificate of Incorporation of Pulse Biosciences, Inc. | 8-K12B | 001-37744 | 3.3 | June 18, 2018 |
| 3.4 | Bylaws of Pulse Biosciences, Inc. | 8-K12B | 001-37744 | 3.4 | June 18, 2018 |
| 4.1 | Specimen Common Stock Certificate | 8-K12B | 001-37744 | 4.1 | June 18, 2018 |
| 4.2 | Form of Warrant | S-3 | 333-278494 | 4.3 | April 3, 2024 |
| 4.3 | Form of Warrant Agent Agreement | S-3 | 333-278494 | 4.4 | April 3, 2024 |
| 10.1 | Lease for facilities at 3955 Point Eden Way, Hayward, California, dated January 26, 2017 | 10-K | 001-37744 | 10.1 | March 20, 2017 |
| 10.4+ | Employment Agreement between Mitchell E. Levinson and the Registrant | 10-K | 001-37744 | 10.4 | March 31, 2022 |
| 10.5+ | Employment Agreement between Kevin Danahy and the Registrant | 10-K | 001-37744 | 10.5 | March 31, 2022 |
| 10.6 | Securities Purchase Agreement, dated February 7, 2017, by and between Pulse Biosciences, Inc. and certain purchasers | 8-K | 001-37744 | 10.1 | February 10, 2017 |
| 10.7 | Securities Purchase Agreement, dated September 24, 2017, by and between Pulse Biosciences, Inc. and certain purchasers | 8-K | 001-37744 | 10.1 | September 25, 2017 |
| 10.8+ | 2015 Stock Incentive Plan | S-1 | 333-208694 | 10.2 | December 22, 2015 |
| 10.9+ | 2017 Inducement Equity Incentive Plan and forms of agreements thereunder | 8-K | 001-37744 | 10.1 | November 28, 2017 |
| 10.10+ | 2017 Equity Incentive Plan and forms of agreements thereunder | 10-K | 001-37744 | 10.10 | March 12, 2021 |
| 10.11+ | 2017 Employee Stock Purchase Plan and forms of agreements thereunder | 8-K | 001-37744 | 10.2 | May 19, 2017 |
| 10.13+ | Executive Employment Agreement between Darrin R. Uecker and the Registrant | S-1 | 333-208694 | 10.9 | December 22, 2015 |
| 10.14+ | Amendment to Employment Agreement between Darrin R. Uecker and Pulse Biosciences, Inc. dated October 5, 2016 | 8-K | 001-37744 | 10.1 | October 11, 2016 |
| 10.15+ | Form of At-Will Employment, Confidential Information, Invention Assignment, and Arbitration Agreement for Employees | S-1 | 333-208694 | 10.10 | December 22, 2015 |
| 10.16+ | Form of Indemnification Agreement | 8-K12B | 001-37744 | 10.1 | June 18, 2018 |
| 10.17 | First Amendment to the lease for facilities at 3955 Point Eden Way, Hayward, California, dated May 28, 2019 | 8-K | 001-37744 | 10.19 | May 31, 2019 |
| 10.18 | At-the-Market Equity Offering Sales Agreement | 8-K | 001-37744 | 1.1 | July 15, 2024 |
| 10.19 | Securities Purchase Agreement, dated June 30, 2021, by and between Pulse Biosciences, Inc. and Robert W. Duggan | 8-K | 001-37744 | 10.1 | July 1, 2021 |
| 10.20 | Indemnification Letter, dated May 27, 2022, by and between Pulse Biosciences, Inc. and Robert W. Duggan | 10-Q | 001-37744 | 10.1 | August 10, 2022 |
| 10.21 | Loan Agreement, dated as of September 20, 2022, by and between Pulse Biosciences, Inc. and Robert W. Duggan | 8-K | 001-37744 | 10.1 | September 23, 2022 |
| 10.22+ | Amendment to Employment Agreement, between Darrin Uecker and Pulse Biosciences, Inc., dated September 20, 2022 | 8-K | 001-37744 | 10.2 | September 23, 2022 |
| 10.23+ | Amendment to Employment Agreement, between Kevin Danahy and Pulse Biosciences, Inc., dated September 23, 2022 | 8-K | 001-37744 | 10.1 | September 28, 2022 |
| 10.24+ | Amendment to Employment Agreement, between Kevin Danahy and Pulse Biosciences, Inc., dated May 4, 2023 | 8-K | 001-37744 | 10.1 | May 5, 2023 |
| 10.25+ | Amendment to Employment Agreement, between Darrin Uecker and Pulse Biosciences, Inc., dated May 5, 2023 | 8-K | 001-37744 | 10.2 | May 5, 2023 |
| 10.26+ | Third Amendment to Employment Agreement, between Kevin Danahy and Pulse Biosciences, Inc., dated March 2024 | 10-K | 001-37744 | 10.26 | March 28, 2024 |
| 10.27+ | Fourth Amendment to Employment Agreement, between Darrin Uecker and Pulse Biosciences, Inc., dated March 2024 | 10-K | 001-37744 | 10.27 | March 28, 2024 |
| 10.28+ | Employment Agreement between Paul A. LaViolette and the Registrant | 8-K | 001-37744 | 10.1 | January 13, 2025 |
| 10.29+ | Employment Agreement between Jon Skinner and the Registrant | 8-K | 001-37744 | 10.1 | January 31, 2025 |
| 21.1* | List of Subsidiaries | | | | |
| 23.1* | Consent of Independent Registered Public Accounting Firm | | | | |
| 31.1* | Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. | | | | |
| 31.2* | Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. | | | | |
| 32.1* | Certification of the Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (18 U.S.C. Section 1350). | | | | |
| 32.2* | Certification of the Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (18 U.S.C. Section 1350). | | | | |
| 97.1+ | Section 10D Clawback Policy | 10-K | 001-37744 | 97.1 | March 28, 2024 |

| | |
|---|---|
| 101.INS | Inline XBRL Instance Document |
| 101.SCH | Inline XBRL Taxonomy Extension Schema Document |
| 101.CAL | Inline XBRL Taxonomy Extension Calculation Linkbase Document |
| 101.DEF | Inline XBRL Taxonomy Extension Definition Linkbase Document |
| 101.LAB | Inline XBRL Taxonomy Extension Label Linkbase Document |
| 101.PRE | Inline XBRL Taxonomy Extension Presentation Linkbase Document |
| 104 | Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101) |

* Filed herewith
+ Indicates a management contract or compensatory plan or arrangement.
# Portions of this exhibit (indicated by asterisks) have been omitted pursuant to a grant of confidential treatment.

**Item 16. Form 10-K Summary**

None.

**Signatures**

Pursuant to the requirements of the Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

**PULSE BIOSCIENCES, INC.**

Date: March 28, 2025

By: /s/ Paul A. LaViolette
Paul A. LaViolette
Chief Executive Officer
*(Principal Executive Officer)*

**POWER OF ATTORNEY**

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Paul A. LaViolette and Jon Skinner, jointly and severally, as his true and lawful attorney-in-fact and agent, with full power of substitution, each with power to act alone, to sign and execute on behalf of the undersigned any and all amendments to this Annual Report on Form 10-K, and to perform any acts necessary in order to file the same, with all exhibits thereto and other documents in connection therewith with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requested and necessary to be done in connection therewith, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or their or his or her substitutes, shall do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed by the following persons on behalf of the Registrant in the capacities and on the dates indicated.

| Signature | Title | Date |
|---|---|---|
| /s/ Paul A. LaViolette<br>Paul A. LaViolette | Chief Executive Officer and Co-Chairman of the Board of Directors<br>(*Principal Executive Officer)* | March 28, 2025 |
| /s/ Robert W. Duggan<br>Robert W. Duggan | Co-Chairman of the Board of Directors | March 28, 2025 |
| /s/ Darrin R. Uecker<br>Darrin R. Uecker | Chief Technology Officer and Director | March 28, 2025 |
| /s/ Manmeet S. Soni<br>Manmeet S. Soni | Director | March 28, 2025 |
| /s/ Mahkam Zanganeh<br>Mahkam Zanganeh | Director | March 28, 2025 |
| /s/ Richard A. van den Broek<br>Richard A. van den Broek | Director | March 28, 2025 |
| /s/ Jon Skinner<br>Jon Skinner | Chief Financial Officer<br>*(Principal Financial Officer)* | March 28, 2025 |
| /s/ Timothy H. Mitsuoka<br>Timothy H. Mitsuoka | Corporate Controller<br>*(Principal Accounting Officer)* | March 28, 2025 |