

The information in this preliminary prospectus supplement is not complete and may be changed. A registration statement relating to these securities has been filed with the Securities and Exchange Commission and is effective. This preliminary prospectus supplement and accompanying prospectus are not an offer to sell these securities, and we are not soliciting offers to buy these securities, in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED NOVEMBER 16, 2022

PRELIMINARY PROSPECTUS SUPPLEMENT
(To Prospectus Dated November 29, 2021)

\$30,000,000



We are offering \$30,000,000 of shares of our common stock.

Our common stock is listed on The NASDAQ Global Market under the symbol “BDSX.” On November 15, 2022, the last reported sale price of our common stock on The NASDAQ Global Market was \$1.06 per share.

We are an “emerging growth company” and a “smaller reporting company” under federal securities laws and as such, have elected to comply with reduced public company reporting requirements for this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and may elect to comply with reduced public company reporting requirements in future filings. See “Prospectus Supplement Summary—Implications of Being an Emerging Growth Company and Smaller Reporting Company.”

Our business and an investment in our common stock involve significant risks. These risks are described under the caption “[Risk Factors](#)” beginning on page S-7 of this prospectus supplement and in the documents incorporated by reference into this prospectus supplement.

	Price to Public	Underwriting Discounts and Commissions ⁽¹⁾	Proceeds to Biodesix
Per share	\$	\$	\$
Total	\$	\$	\$

⁽¹⁾ We have agreed to reimburse the underwriters for certain FINRA-related expenses. See “Underwriting” for a detailed description of the compensation payable to the underwriters.

We have granted the underwriter an option to purchase up to an additional \$4,500,000 of shares of common stock at the public offering price less underwriting discounts and commissions.

Certain members of our board of directors and funds affiliated with our board of directors, have indicated an interest in purchasing approximately \$15.4 million in shares of our common stock in this offering at the public offering price. However, because indications of interest are not binding agreements or commitments to purchase, the underwriter may determine to sell more, fewer, or no shares in this offering to such potential investors, or these potential investors may determine to purchase more, fewer, or no shares in this offering.

In connection with the completion of this offering, certain members of management expect to invest approximately \$319,000 in a private placement of shares of common stock equal to the public offering price per share of common stock in this offering (without payment of any underwriting discounts or commissions).

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

The underwriters expect to deliver the shares of common stock to purchasers on November , 2022.

William Blair

The date of this prospectus supplement is November , 2022.

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ABOUT THIS PROSPECTUS SUPPLEMENT

We provide information to you about this offering of shares of our common stock in two separate documents that are bound together: (1) this prospectus supplement, which describes the specific details regarding this offering; and (2) the accompanying base prospectus, which provides general information, some of which may not apply to this offering. If any statement in one of these documents is inconsistent with a statement in another document having a later date—for example, a document incorporated by reference in this prospectus supplement—the statement in the document having the later date modifies or supersedes the earlier statement as our business, financial condition, results of operations and prospects may have changed since the earlier dates.

We have not authorized any other person to provide you with any information other than that contained in, or incorporated by reference into, this prospectus supplement, the accompanying prospectus and in any free writing prospectus that we may authorize for use in connection with this offering. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We are not making an offer to sell or soliciting an offer to buy our securities in any jurisdiction in which an offer or solicitation is not authorized or in which the person making that offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make an offer or solicitation. You should assume that the information appearing in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein, and in any free writing prospectus that we may authorize for use in connection with this offering, is accurate only as of the date of those respective documents. Our business, financial condition, results of operations and prospects may have changed since those dates. You should read this prospectus supplement, the accompanying prospectus, the documents incorporated by reference into this prospectus supplement, and any free writing prospectus that we may authorize for use in connection with this offering, in their entirety before making an investment decision. You should also read and consider the information in the documents to which we have referred you in the sections of this prospectus supplement and the accompanying prospectus entitled “Where You Can Find More Information” and “Incorporation of Certain Information By Reference.”

We are offering to sell, and seeking offers to buy, shares of common stock only in jurisdictions where offers and sales are permitted. The distribution of this prospectus supplement and the accompanying prospectus and the offering of the common stock in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement and the accompanying prospectus must inform themselves about, and observe any restrictions relating to, the offering of the common stock and the distribution of this prospectus supplement and the accompanying prospectus outside the United States. This prospectus supplement and the accompanying prospectus do not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus supplement by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

In this prospectus supplement, the terms “Biodesix,” “Company,” “we,” “us,” “our” and similar terms refer to Biodesix, Inc., a Delaware corporation, and its subsidiaries unless the context otherwise requires.

This prospectus supplement and the information incorporated herein by reference include trademarks, service marks and trade names owned by us or other companies. All trademarks, service marks and trade names included or incorporated by reference in this prospectus supplement are the property of their respective owners.

INDUSTRY AND MARKET DATA

The data included in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein contains estimates, projections and other information concerning our industry and our business, including estimated market size, projected growth rates and the incidence of certain medical conditions. Unless otherwise expressly stated, we obtained this industry, business, market, medical and other information from reports, research surveys, studies and similar data prepared by third parties, industry, medical and general publications, government data and similar sources. In some cases, we do not expressly refer to the sources from which this information is derived. In that regard, when we refer to one or more sources of this type of information in any paragraph, you should assume that other information of this type appearing in the same paragraph is derived from the same sources, unless otherwise expressly stated or the context otherwise requires.

This industry, business, market, medical and other information involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. Third-party industry and general publications, research, surveys and studies generally state that the information contained therein has been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. While we believe that each of these studies and publications is reliable, we have not independently verified any of the data from third-party sources. Although we are responsible for all of the disclosure contained in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and we believe the market position, market opportunity, market size and medical information included in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein is reliable, such information is inherently imprecise. Data regarding the industries in which we compete and our market position and market share within these industries are inherently imprecise and are subject to significant business, economic and competitive uncertainties beyond our control, but we believe that they generally indicate size, position and market share within these industries. We believe these estimates to be accurate as of the date of this prospectus supplement or as of the date of the documents incorporated by reference herein. However, this information may prove to be inaccurate because of the method by which we obtained some of the data for the estimates or because this information cannot always be verified with complete certainty due to the limits on the availability and reliability of raw data, the voluntary nature of the data gathering process and other limitations and uncertainties. As a result, you should be aware that market, ranking and other similar industry data included in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein, and estimates and beliefs based on that data, may not be reliable and are subject to change based on various factors, including those discussed under “Risk Factors” and “Special Note Regarding Forward-Looking Statements.”

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights certain information about us, this offering and selected information contained elsewhere in or incorporated by reference into this prospectus supplement and the accompanying prospectus. This summary is not complete and does not contain all of the information that you should consider before deciding whether to invest in the securities covered by this prospectus supplement. For a more complete understanding of Biodesix and this offering, we encourage you to read and consider carefully the more detailed information in this prospectus supplement, including the information incorporated by reference in this prospectus supplement, the accompanying prospectus and the information included in any free writing prospectus that we have authorized for use in connection with this offering, including the information referred to under the heading “Risk Factors” in this prospectus supplement beginning on page S-7.

Overview

We are a leading data-driven diagnostic solutions company leveraging state of the art technologies with our proprietary artificial intelligence platform to discover, develop, and commercialize solutions for clinical unmet needs, with a primary focus in lung disease. In addition to diagnostic tests, we provide biopharmaceutical companies with services that include diagnostic research, clinical trial testing, and the discovery, development, and commercialization of companion diagnostics.

We perform our blood-based diagnostic tests in our laboratory facilities, which are located in Boulder, Colorado and De Soto, Kansas. In May 2020, the Federal Drug Administration (“FDA”) granted Emergency Use Authorization (“EUA”) of the Bio-Rad SARS-CoV-2 Droplet Digital™ polymerase chain reaction (“ddPCR”) test to detect Coronavirus Disease 2019 (“COVID-19”) infection. In April 2020, the FDA authorized the Platelia SARS-CoV-2 Total Ab test to detect COVID-19 antibodies. Medical products that are granted an EUA are only permitted to commercialize their products under the terms and conditions provided in the authorization. The FDA may revoke an EUA where it is determined that the underlying health emergency no longer exists or warrants such authorization, if the conditions for the issuance of the EUA are no longer met, or if other circumstances make revocation appropriate to protect the public health or safety.

Blood-Based Lung Tests

We offer five blood-based lung cancer tests across the lung cancer continuum of care:

Diagnosis

- Nodify XL2® and Nodify CDT® tests, marketed as our Nodify Lung® Nodule Risk Assessment testing strategy, assess the risk of lung cancer to help identify the most appropriate treatment pathway. We believe we are the only company to offer two commercial blood-based tests to help physicians reclassify risk of malignancy in patients with suspicious lung nodules.

Treatment & Monitoring

- GeneStrat ddPCR® and VeriStrat® tests, marketed as part of our new IQLung™ testing strategy, are used following diagnosis of lung cancer to measure the presence of mutations in the tumor and the state of the patient’s immune system to establish the patient’s prognosis and help guide treatment decisions. The GeneStrat ddPCR tumor profiling test and the VeriStrat immune profiling test have a 36-hour average turnaround time, providing physicians with timely results to facilitate treatment decisions.
- GeneStrat NGS™ (NGS) test, also marketed as part of our new IQLung testing strategy, our 72-hour average turnaround time blood-based NGS test, was launched in November 2021 to a select group of

physicians, with national launch in January 2022. The 52-gene panel includes guideline recommended mutations to help physicians treating advanced-stage lung cancer patients identify targeted therapy mutations in genes, such as EGFR, ALK, KRAS, MET, NTRK, ERBB2, and others, and delivers them in an expedited timeframe so patient treatment can begin sooner.

COVID-19 Tests

We operate and have commercialized the Bodesix WorkSafe testing program, under which we offer three SARS-CoV-2 tests:

- *Bio-Rad SARS-CoV-2 ddPCR* test, which is FDA EUA authorized to be performed by Clinical Laboratory Institute Amendments (CLIA) authorized laboratories that perform high complexity tests. The ddPCR test is designed to detect the presence of infection by the SARS-CoV-2 virus.
- *Platelia SARS-CoV-2 Total Ab* test, which is an antibody test, FDA EUA authorized, intended for detecting a B-cell immune response to SARS-CoV-2, indicating recent or prior infection.
- *cPass™ SARS-CoV-2 Neutralization Antibody* test, which is the first blood-based surrogate neutralizing antibody test with FDA EUA and uses ELISA technology to qualitatively detect circulating neutralizing antibodies to the receptor binding domain in the spike protein of SARS-CoV-2 that are produced in response to a previous SARS-CoV-2 infection. This test was commercially introduced in partnership with GenScript Biotech Corporation.

These tests under the Bodesix WorkSafe testing program are utilized by healthcare providers, including hospitals and nursing homes, and are also offered to businesses and educational systems to assist in their back-to-work or back-to-school strategies, a crucial element of restarting economic activity.

In developing our products, we have built or gained access to unique biorepositories, proprietary technology, and bioinformatics methods that we believe are important to the development of new targeted therapies, determining clinical trial eligibility and guiding treatment selection. Our testing services are made available through our clinical laboratories.

Implications of Being an Emerging Growth Company and Smaller Reporting Company

We are an “emerging growth company” within the meaning of the Jumpstart Our Business Startups Act (JOBS Act). As an emerging growth company, we may take advantage of certain exemptions from various public company reporting requirements, including the requirement that our internal control over financial reporting be audited by our independent registered public accounting firm pursuant to Section 404 of the Sarbanes-Oxley Act of 2002, certain requirements related to the disclosure of executive compensation in this prospectus supplement and in our periodic reports and proxy statements, the requirement that we hold a nonbinding advisory vote on executive compensation and any golden parachute payments, and we have taken advantage of the ability to provide reduced disclosure of financial information in this prospectus supplement, such as being permitted to include only two years of audited financial information and two years of selected financial information in addition to any required unaudited interim financial statements, with correspondingly reduced “Management’s Discussion and Analysis of Financial Condition and Results of Operations” disclosure. We may take advantage of these exemptions until we are no longer an emerging growth company. Section 107 of the JOBS Act provides that an “emerging growth company” can take advantage of the extended transition period provided in Section 7(a)(2)(B) of the Securities Act of 1933, as amended (the “Securities Act”), for complying with new or revised accounting standards. In other words, an “emerging growth company” can delay the adoption of certain accounting standards until those standards would otherwise apply to private companies.

We have elected to take advantage of the extended transition period to comply with new or revised accounting standards and to adopt certain of the reduced disclosure requirements available to emerging growth

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companies. As a result of the accounting standards election, we will not be subject to the same implementation timing for new or revised accounting standards as other public companies that are not emerging growth companies, which may make comparison of our financials to those of other public companies more difficult. Additionally, because we have taken advantage of certain reduced reporting requirements, the information contained herein may be different from the information you receive from other public companies in which you hold stock.

We will remain an emerging growth company until the earliest to occur of (i) the last day of the fiscal year in which we have more than \$1.24 billion in annual revenue; (ii) the date we qualify as a “large accelerated filer,” with at least \$700 million of equity securities held by non-affiliates; (iii) the date on which we have issued, in any three-year period, more than \$1.0 billion in non-convertible debt securities; and (iv) the last day of the fiscal year ending after the fifth anniversary of the completion of our initial public offering.

Additionally, we are a “smaller reporting company” as defined in Item 10(f)(1) of Regulation S-K. Smaller reporting companies may take advantage of certain reduced disclosure obligations, including, among other things, providing only two years of audited financial statements. We will remain a smaller reporting company until the last day of the fiscal year in which (i) the market value of our common stock held by non-affiliates exceeds \$250 million as of the end of that year’s second fiscal quarter, or (ii) our annual revenues exceeded \$100 million during such completed fiscal year and the market value of our common stock held by non-affiliates exceeds \$700 million as of the end of that year’s second fiscal quarter. To the extent we take advantage of such reduced disclosure obligations, it may also make comparison of our financial statements with other public companies difficult or impossible.

Corporate Information

We were incorporated in Delaware in 2005 as Elston Technologies, Inc. Our principal executive offices are located at 2970 Wilderness Place, Suite 100, Boulder, Colorado 80301, and our telephone number is (303) 417-0500. On June 20, 2006, we changed our name to Biodesix, Inc.

Our website address is www.biodesix.com. Information contained on, or accessible from, or hyperlinked to, our website is not incorporated by reference into this prospectus supplement, and you should not consider information on our website to be part of this prospectus supplement, or in deciding whether to purchase our common stock.

Our filings with the SEC are posted on our website at www.biodesix.com. Other than the specifically incorporated SEC filings, the information found on or accessible through our website is not part of this prospectus supplement, the accompanying prospectus or any other report we file with or furnish to the SEC. The public can also obtain copies of these filings by accessing the SEC’s website at <http://www.sec.gov>.

Recent Developments

Perceptive Term Loan Facility

We have entered into a senior secured delayed draw term loan facility with Perceptive Advisors LLC (“Perceptive”), in an aggregate principal amount of up to \$50.0 million (the “Perceptive Term Loan Facility”). The funding of the Perceptive Term Loan Facility is subject to a capital raise of at least \$30.0 million in shares of our common stock. The Tranche A Loan, in an aggregate amount of up to \$30.0 million, will be funded under the Perceptive Term Loan Facility substantially concurrently with the closing of this offering (the “Tranche A Loan”). In addition to the Tranche A Loan, the Perceptive Term Loan Facility includes an additional Tranche B Loan, in an aggregate amount of up to \$10.0 million, and an additional Tranche C Loan, in an aggregate amount of up to \$10.0 million, each of which will be accessible by us so long as we satisfy certain customary conditions precedent, including revenue milestones. The Perceptive Term Loan Facility provides for an “interest-only”

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period during the term of the loan with principal due at the maturity date, which will be 5 years following the funding date of the Tranche A Loan. The Perceptive Term Loan Facility will accrue interest at an annual rate equal to the greater of (a) forward-looking one-month term SOFR as posted by CME Group Inc. and (b) 3.0% per annum, plus an applicable margin of 9.0%. The Perceptive Term Loan Facility contains customary representations and warranties and events of default, including certain “change of control” events involving us, and is secured by a first lien on all of our assets, subject to customary exceptions.

We shall also issue Perceptive warrants to purchase up to 5,000,000 shares of our common stock, with warrants exercisable into 3,000,000 shares of our common stock issued on the funding date of the Tranche A Loans (the “Initial Warrants”). The per share exercise price for the Initial Warrants will be equal to the lower of (i) the 10-day volume weighted average price (the “10-day VWAP”) ending on the business day immediately preceding the funding date of the Tranche A Loan and (ii) the per share public offering price of our shares of common stock in this offering. In addition to the Initial Warrants, additional warrants will become exercisable into 1,000,000 shares of our common stock concurrently with the borrowing of the Tranche B Loan, and additional warrants will become exercisable into 1,000,000 shares of our common stock concurrently with the borrowing of the Tranche C Loan. The per share exercise price for the additional warrants will be equal to the lower of (i) the Initial Warrant exercise price and (ii) the 10-day VWAP ending on the business day immediately preceding the funding date of the Tranche B Loan or the Tranche C loan, respectively. Each warrant will be exercisable, in whole or in part, until the 10th anniversary of the applicable date of issuance.

Substantially concurrently with the completion of this offering and the funding of the Tranche A Loan under the Perceptive Term Loan Facility, we expect that the existing \$16.0 million promissory note with Streeterville Capital, LLC (“Promissory Note One”) and the \$30.0 million Loan and Security Agreement with Silicon Valley Bank (the “2021 Term Loan”), with a remaining principal balance of \$3.0 million, will both be repaid in full.

THE OFFERING

Common stock offered by us	\$30,000,000 of shares of our common stock.
Option to purchase additional shares	We have granted the underwriter a 30-day option to purchase up to additional \$4,500,000 of shares of our common stock.
Common stock to be outstanding after this offering	69,487,419 shares, which is based on an aggregate offering of \$30,000,000 of shares of our common stock by us at an assumed public offering price of \$1.06 per share of common stock (the last reported sale price of our common stock on The Nasdaq Global Market on November 15, 2022).
Use of proceeds	<p>We estimate that the net proceeds from the sale of shares of our common stock that we are selling in this offering will be approximately \$27.9 million (or approximately \$32.1 million if the underwriter exercises its option to purchase additional shares of common stock from us in full), after deducting underwriting discounts and commissions and estimated offering expenses payable by us.</p> <p>Our management will retain broad discretion regarding the allocation and use of the net proceeds from this offering. We currently intend to use the net proceeds from this offering for commercial expansion of sales, supporting our product pipeline, research and development and for general corporate purposes. See “Use of Proceeds” on page S-13 of this prospectus supplement. Upon the funding of the Tranche A Loan under the Perceptive Term Loan Facility, we expect our existing debt will have been substantially repaid in full. For additional information on the Perceptive Term Loan Facility, see “—Recent Developments.”</p>
NASDAQ Global Market symbol	“BDSX.”
Risk factors	Investing in our securities involves a high degree of risk. See “Risk Factors” beginning on page S-7 of this prospectus supplement and the other information included in, or incorporated by reference into, this prospectus supplement for a discussion of certain factors that you should carefully consider before deciding to invest in shares of our common stock.

The number of shares of common stock shown above to be outstanding immediately following this offering is based on 41,185,532 shares outstanding as of September 30, 2022 and excludes:

- 174,890 shares of common stock reserved for future issuance under our 2020 Equity Incentive Plan (the “2020 Incentive Plan”); and
- 100,145 shares of common stock reserved for issuance pursuant to future awards under our 2020 Employee Stock Purchase Plan (“ESPP”).

Unless we specifically state otherwise, this prospectus supplement reflects and assumes no exercise of outstanding options, warrants or restricted stock units (“RSUs”) and no exercise of the underwriter’s option to purchase additional shares of common stock.

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Certain members of our board of directors and funds affiliated with our board of directors have indicated an interest in purchasing approximately \$15.4 million in shares of our common stock in this offering at the public offering price. However, because indications of interest are not binding agreements or commitments to purchase, the underwriter may determine to sell more, fewer, or no shares in this offering to such potential investors, or these potential investors may determine to purchase more, fewer, or no shares in this offering.

In connection with the completion of this offering, certain members of management expect to invest approximately \$319,000 in a private placement of shares of common stock equal to the public offering price per share of common stock in this offering (without payment of any underwriting discounts or commissions).

RISK FACTORS

Investing in our common stock involves a high degree of risk. You should consider and read carefully all of the risks and uncertainties described below, as well as all the other information contained in the prospectus supplement or incorporated by reference into this prospectus supplement and the accompanying prospectus. You should also consider the risks, uncertainties and assumptions discussed under the caption “Risk Factors” included in our Annual Report on Form 10-K for the year ended December 31, 2021 and in our Quarterly Reports on Form 10-Q for the periods ended March 31, June 30 and September 30, 2022 and in subsequent filings, which are incorporated by reference into this prospectus supplement and the accompanying prospectus. These risk factors may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future. The risks described below are not the only ones facing us. The occurrence of any of the following risks or additional risks and uncertainties not presently known to us or that we currently believe to be immaterial could materially and adversely affect our business, financial condition and results of operations. In such case, the trading price of our common stock could decline, and you may lose all or part of your investment. This prospectus supplement and the accompanying prospectus also contain forward-looking statements and estimates that involve risks and uncertainties. Our actual results could differ materially from those anticipated in the forward-looking statements as a result of specific factors, including the risks and uncertainties described below.

Risks Related to This Offering

Sales of a substantial number of shares of our common stock in the public market or raising additional funds through debt or equity financing could cause our stock price to fall.

To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest may be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect your rights as a stockholder. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take certain actions, such as incurring debt, making capital expenditures or declaring dividends. If we raise additional funds through collaborations, strategic collaborations or partnerships, or marketing, distribution or licensing arrangements with third parties, we may be required to limit valuable rights to our intellectual property, technologies, or future revenue streams, or grant licenses or other rights on terms that are not favorable to us. Furthermore, any additional fundraising efforts may divert our management from their day-to-day activities, which may adversely affect our ability to develop and commercialize our diagnostic testing and services.

We have broad discretion in the use of the net proceeds from this offering.

Our management will have broad discretion in the application of the net proceeds from this offering and could spend the proceeds in ways with which you may not agree. Accordingly, you will be relying on the judgment of our management with regard to the use of the net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used appropriately. It is possible that the net proceeds will be invested or otherwise used in a way that does not yield a favorable, or any, return for our company.

The price of our common stock may be volatile and fluctuate substantially, which could result in substantial losses for purchasers of our common stock in this offering.

Our stock price has been and is likely to continue to be volatile. The stock market in general and the market for pharmaceutical and biotechnology companies in particular have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. As a result of this volatility, our stockholders may not be able to sell our common stock at or above the price they paid for it. The market price for our common stock may be influenced by many factors, including:

- our ability to continue as a going concern;

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- the level of demand for our diagnostic tests, which may vary significantly;
- the timing and cost of manufacturing our diagnostic tests, which may vary depending on the quantity of production and the terms of our agreements with third-party suppliers and manufacturers;
- expenditures that we may incur to acquire, develop or commercialize additional tests and technologies;
- unanticipated pricing pressures;
- the rate at which we grow our sales force and the speed at which newly hired salespeople become effective, and the cost and level of investment therein;
- the degree of competition in our industry and any change in the competitive landscape of our industry, including consolidation among our competitors or future partners;
- coverage and reimbursement policies with respect to lung cancer treatment equipment, and potential future diagnostic tests that compete with our diagnostic tests;
- the timing and success or failure of clinical trials for our diagnostic tests or any enhancements to such tests we develop or competing diagnostic tests;
- positive or negative coverage, or public perception, of our diagnostic tests or those of our competitors or broader industry trends;
- the impact, if any, of the spread of COVID-19 and any newly discovered variants, and the resulting effects on the number of patients treated or the demand for our non-COVID-19 diagnostic tests;
- the timing and cost of, and level of investment in, research, development, licenses, regulatory approval, conformity certification, commercialization activities, acquisitions and other strategic transactions, or other significant events relating to our diagnostic tests, which may change from time to time;
- the timing and cost of obtaining regulatory approvals, conformity certifications or clearances for planned or future improvements or enhancements to our diagnostic tests;
- changes in regulatory requirements or in the status of regulatory approvals or applications or conformity certifications;
- pricing, discounts and incentives for our diagnostic tests;
- future accounting pronouncements or changes in our accounting policies;
- security breaches, cyber-attacks, failures in our information systems, or fraudulent activity;
- general market conditions; and
- the other factors described in the “Risk Factors” sections of our Form 10-K for the year ended December 31, 2021 and in our Quarterly Reports on Form 10-Q for the periods ended March 31, June 30 and September 30, 2022, and in subsequent filings, which are incorporated by reference into this prospectus supplement and the accompanying prospectus.

In addition, the spread of COVID-19 has caused a broad impact globally. While the potential economic impact brought by, and the duration of, COVID-19 may be difficult to assess or predict, it has significantly disrupted global financial markets, and a recession or market correction resulting from the spread or continuation of COVID-19 could materially affect our business and the value of our common stock.

If you purchase our common stock in this offering, you will incur immediate and substantial dilution in the book value of your shares.

If you purchase our common stock in this offering, you will incur an immediate dilution of \$ in net tangible book value (deficit) per share from the price you paid, based on the public offering price of \$ per

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share, and assuming no exercise of the underwriter's option to purchase additional shares. The exercise of outstanding options, warrants or RSUs will result in further dilution. For a further description of the dilution that you will experience immediately after this offering, see the section titled "Dilution."

The terms of the Perceptive Term Loan Facility require us to meet certain operating and financial covenants and place restrictions on our operating and financial flexibility.

We have entered into the Perceptive Term Loan Facility to refinance long-term debt, with the funding of the Tranche A Loan occurring substantially concurrently with the closing of this offering. The Perceptive Term Loan Facility provides for an "interest-only" period during the term of the loan with principal due at the maturity date, which will be 5 years following the funding date of the Tranche A Loan.

The Perceptive Term Loan Facility may be prepaid by us at any time, subject to a prepayment penalty of 102% to 110% of the prepayment amount, depending on the date of prepayment. The Perceptive Term Loan Facility contains customary affirmative and negative covenants for a loan, requires us to comply with a minimum liquidity covenant, and has a mutually agreed upon net revenue requirement. Failure to comply with the covenants and loan requirements may result in an event of default. We have also granted Perceptive a security interest in substantially all of our assets, including our intellectual property.

The Perceptive Term Loan Facility also contains certain covenants limiting our ability to, among other things, incur future debt, transfer assets except for the ordinary course of business, make acquisitions, pay dividends or make certain other restricted payments, or sell assets, subject to certain exceptions. These covenants may restrict our ability to pursue new business opportunities and access additional capital.

Any failure to comply with the restrictions may cause an event of default. In the event of a default, Perceptive may elect to declare all amounts outstanding to be immediately due and payable, and may proceed against the collateral granted to them to secure such indebtedness, including a royalty-free license or other right to use all of our intellectual property, which could have a material adverse effect on our business, financial condition, and results of operations.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement and the accompanying prospectus contain forward-looking statements about us and our industry that involve substantial risks and uncertainties. All statements other than statements of historical facts contained in this prospectus supplement and the accompanying prospectus, including statements regarding our future financial condition, results of operations, business strategy and plans, and objectives of management for future operations, as well as statements regarding industry trends, are forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as “anticipate,” “believe,” “continue,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “potentially,” “predict,” “should,” “will” or the negative of these terms or other similar expressions.

We have based these forward-looking statements largely on our current expectations and projections about future events and trends that we believe may affect our financial condition, results of operations, business strategy and financial needs. These forward-looking statements are subject to a number of risks, uncertainties, factors, and assumptions described under the section titled “Risk Factors” and elsewhere in this prospectus supplement and the accompanying prospectus, regarding, among other things:

- the impact of a pandemic, epidemic, or outbreak of an infectious disease in the United States or worldwide, including the continuing spread of COVID-19 (including notable and severe mutations of the virus) may have a material adverse effect on our operations, our ability to generate revenues and income, and our ability to maintain compliance with our debt covenants and, under certain circumstances, remain a going concern;
- our inability to achieve or sustain profitability;
- our unaudited financial statements include a statement that there is a substantial doubt about our ability to continue as a going concern and a continuation of negative financial trends could result in our inability to continue as a going concern;
- our ability to attain significant market acceptance among payers, providers, clinics, patients, and biopharmaceutical companies for our diagnostic tests;
- difficulties managing our growth, which could disrupt our operations;
- failure to retain sales and marketing personnel, and failure to increase our sales and marketing capabilities or develop broad awareness of our diagnostic tests to generate revenue growth;
- failure to maintain our current relationships, or enter into new relationships, with biopharmaceutical companies;
- significant fluctuation in our operating results, causing our operating results to fall below expectations or any guidance we provide;
- the demand for our Bidesix WorkSafe™ testing program and our ability to meet such demand;
- product performance and reliability to maintain and grow our business;
- third-party suppliers, including courier services, contract manufacturers and single source suppliers, making us vulnerable to supply problems and price fluctuations;
- natural or man-made disasters and other similar events, including the COVID-19 pandemic, negatively impacting our business, financial condition, and results of operations;
- failure to offer high-quality support for our diagnostic tests, which may adversely affect our relationships with providers and negatively impact our reputation among patients and providers;
- our inability to continue to innovate and improve our diagnostic tests and services we offer;
- security or data privacy breaches or other unauthorized or improper access;

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- significant disruptions in our information technology systems;
- the incurrence of substantial liabilities and limiting or halting the marketing and sale of our diagnostic tests due to product liability lawsuits;
- our inability to compete successfully with competition from many sources, including larger companies;
- performance issues, service interruptions or price increases by our shipping carriers and warehousing providers;
- cost-containment efforts of our customers, purchasing groups and integrated delivery networks having a material adverse effect on our sales and profitability;
- potential effects of litigation and other proceedings;
- general economic and financial market conditions;
- our ability to attract and retain key personnel;
- current and future debt financing placing restrictions on our operating and financial flexibility;
- our need to raise additional capital to fund our existing operations, develop our platform, commercialize new diagnostic tests, or expand our operations;
- the acquisition of other businesses, which could require significant management attention;
- the uncertainty of the insurance coverage and reimbursement status of newly approved diagnostic tests;
- future healthcare reform measures that could hinder or prevent the commercial success of our diagnostic tests;
- compliance with anti-corruption, anti-bribery, anti-money laundering and similar laws;
- compliance with healthcare fraud and abuse laws;
- our ability to develop, receive regulatory clearance or approval or certification for, and introduce new diagnostic tests or enhancements to existing diagnostic tests that will be accepted by the market in a timely manner;
- failure to comply with ongoing FDA or other domestic and foreign regulatory authority requirements, or unanticipated problems with our diagnostic tests, causing them to be subject to restrictions or withdrawal from the market;
- future product recalls;
- legal proceedings initiated by third parties alleging that we are infringing, misappropriating, or otherwise violating their intellectual property rights, the outcome of which would be uncertain;
- the volatility of the trading price of our common stock;
- inaccurate estimates or judgments relating to our critical accounting policies, which could cause our operating results to fall below the expectations of securities analysts and investors; and
- other risks, uncertainties and factors, including those set forth under “Risk Factors” in our Annual Report on Form 10-K for the year ended December 31, 2021 and in our Quarterly Reports on Form 10-Q for the periods ended March 31, June 30 and September 30, 2022.

These risks are not exhaustive. Other sections of this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein may include additional factors that could harm our business and financial performance. New risk factors may emerge from time to time and it is not possible for our management to predict all risk factors, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in, or implied by, any forward-looking statements.

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You should not rely upon forward-looking statements as predictions of future events. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance or achievements. Except as required by law, we undertake no obligation to update publicly any forward-looking statements for any reason after the date of this prospectus supplement or to conform these statements to actual results or to changes in our expectations.

In addition, statements that “we believe” and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this prospectus supplement, and while 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 an exhaustive 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.

You should read this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein with the understanding that our actual future results, levels of activity, performance and achievements may be different from what we expect. We qualify all of our forward-looking statements by these cautionary statements.

USE OF PROCEEDS

We estimate that the net proceeds to us from the sale of \$30,000,000 of shares of common stock in this offering will be approximately \$27.9 million, after deducting underwriting discounts and commissions and estimated offering expenses payable by us. If the underwriter exercises its option to purchase additional shares of common stock from us in full, we estimate that the net proceeds to us will be approximately \$32.1 million, after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

We currently expect to use the net proceeds from this offering for commercial expansion of sales, supporting our product pipeline, research and development and for general corporate purposes. Upon the funding of the Tranche A Loan under the Perceptive Term Loan Facility, we expect our existing debt will have been substantially repaid in full. For additional information on the Perceptive Term Loan Facility, see “Prospectus Supplement Summary—Recent Developments.”

Although we currently anticipate that we will use the net proceeds from this offering as described above, there may be circumstances where a reallocation of funds is necessary. Due to the uncertainties inherent in the product development process, it is difficult to estimate with certainty the exact amounts of the net proceeds from this offering that may be used for the above purposes. The amounts and timing of our actual expenditures will depend upon numerous factors, including our sales and marketing and commercialization efforts, demand for our technology, our operating costs and the other factors described under “Risk Factors” in this prospectus supplement and the accompanying prospectus. Accordingly, we will have broad discretion over the uses of the net proceeds from this offering. Pending the use of the proceeds from this offering, we may invest the proceeds in from this offering in short- and intermediate-term, interest-bearing obligations, investment-grade instruments, certificates of deposit or direct or guaranteed obligations of the United States government.

DILUTION

If you invest in our common stock in this offering, your ownership interest will be diluted immediately to the extent of the difference between the public offering price per share of our common stock and the pro forma as adjusted net tangible book value (deficit) per share of our common stock immediately after the closing of this offering.

Our historical net tangible book value (deficit) as of September 30, 2022 was \$(2,903,000), or \$(0.07) per share of our common stock. Our historical net tangible book value (deficit) is the amount of our total tangible assets less our total liabilities. Historical net tangible book value (deficit) per share represents historical net tangible book value (deficit) divided by the number of shares of our common stock outstanding as of September 30, 2022.

After giving effect to the sale of \$30,000,000 of shares of common stock in this offering at an assumed offering price of \$1.06 per share, the last reported sale price of our common stock on The Nasdaq Global Market on November 15, 2022, and after deducting underwriting discounts and commissions and estimated offering expenses payable by us, our pro forma net tangible book value (deficit) as of September 30, 2022, would have been \$24,972,000, or \$0.36 per share. This represents an immediate increase in pro forma net tangible book value (deficit) of \$0.43 per share to our existing stockholders and immediate dilution of \$0.70 per share to investors purchasing common stock in this offering.

The following table illustrates this dilution on a per share basis to new investors:

Offering price per share of our common stock	\$ 1.06
Historical net tangible book value (deficit) per share as of September 30, 2022	\$(0.07)
Pro forma increase in net tangible book value (deficit) per share as of September 30, 2022	\$ 0.43
Pro forma net tangible book value (deficit) per share after this offering	\$0.36
Dilution of net tangible book value (deficit) per share to new investors	\$0.70

If the underwriter exercises its option to purchase an additional \$4,500,000 of shares of common stock, the net tangible book value (deficit) per share after giving effect to this offering would be \$0.40 per share, and the dilution in pro forma net tangible book value (deficit) per share to new investors in this offering would be \$0.66 per share.

The number of shares of our common stock shown above to be outstanding after this offering is based on 41,185,532 shares outstanding as of September 30, 2022 and excludes:

- 174,890 shares of common stock reserved for future issuance under the 2020 Incentive Plan; and
- 100,145 shares of common stock reserved for issuance pursuant to future awards under the ESPP.

The above illustration of dilution per share to investors participating in this offering assumes no exercise of outstanding options, warrants or RSUs to purchase our common stock. The exercise of outstanding options having an exercise price per share that is less than the offering price per share in this offering will increase dilution to investors in this offering.

**MATERIAL UNITED STATES FEDERAL INCOME TAX CONSEQUENCES
TO NON-UNITED STATES HOLDERS OF OUR COMMON STOCK**

The following is a summary of the material United States federal income tax consequences to non-United States holders (as defined below) of the acquisition, ownership and disposition of our common stock issued pursuant to this offering. This discussion is not a complete analysis of all potential United States federal income tax consequences relating thereto, does not address the potential application of the Medicare contribution tax on net investment income, and does not address any estate or gift tax consequences or any tax consequences arising under any state, local or foreign tax laws, or any other United States federal tax laws. This discussion is based on the Internal Revenue Code of 1986, as amended (the “Code”) and applicable Treasury Regulations promulgated thereunder, judicial decisions and published rulings and administrative pronouncements of the Internal Revenue Service (“IRS”) all as in effect as of the date hereof. These authorities are subject to differing interpretations and may change, possibly retroactively, resulting in United States federal income tax consequences different from those discussed below. We have not requested a ruling from the IRS with respect to the statements made and the conclusions reached in the following summary, and there can be no assurance that the IRS or a court will agree with such statements and conclusions.

This discussion is limited to non-United States holders who purchase our common stock pursuant to this offering and who hold our common stock as a “capital asset” within the meaning of Section 1221 of the Code (generally, property held for investment). This discussion does not address all of the United States federal income tax consequences that may be relevant to a particular holder in light of such holder’s particular circumstances. This discussion also does not consider any specific facts or circumstances that may be relevant to holders subject to special rules under the United States federal income tax laws, including:

- certain former citizens or long-term residents of the United States;
- partnerships or other pass-through entities (and investors therein);
- “controlled foreign corporations”;
- corporations that accumulate earnings to avoid United States federal income tax;
- banks, financial institutions, investment funds, insurance companies, brokers or dealers in securities;
- tax-exempt organizations and governmental organizations;
- foreign pension funds;
- tax-qualified retirement plans;
- persons subject to the alternative minimum tax;
- persons that own, or have owned, actually or constructively, more than 5% of our common stock;
- accrual-method taxpayers subject to special tax accounting rules under Section 451(b) of the Code;
- persons who have elected to mark securities to market; and
- persons holding our common stock as part of a hedging or conversion transaction or straddle, or a constructive sale, or other risk reduction strategy or integrated investment.

If an entity or arrangement that is classified as a partnership for United States federal income tax purposes holds our common stock, the United States federal income tax treatment of a partner in the partnership will generally depend on the status of the partner and the activities of the partnership. Partnerships (including entities or arrangements treated as partnerships for United States federal income tax purposes) holding our common stock and the partners in such partnerships are urged to consult their tax advisors about the particular United States federal income tax consequences to them of holding and disposing of our common stock.

PROSPECTIVE INVESTORS SHOULD CONSULT THEIR TAX ADVISORS REGARDING THE PARTICULAR UNITED STATES FEDERAL INCOME TAX CONSEQUENCES TO THEM OF

ACQUIRING, OWNING AND DISPOSING OF OUR COMMON STOCK, AS WELL AS ANY TAX CONSEQUENCES ARISING UNDER ANY STATE, LOCAL OR FOREIGN TAX LAWS, AN APPLICABLE TAX TREATY OR ANY OTHER UNITED STATES FEDERAL TAX LAWS. IN ADDITION, YOU SHOULD ALSO CONSULT WITH YOUR TAX ADVISOR WITH RESPECT TO POTENTIAL CHANGES IN UNITED STATES FEDERAL TAX LAW AS WELL AS POTENTIAL CHANGES IN STATE, LOCAL OR FOREIGN TAX LAWS.

Definition of Non-United States Holder

For purposes of this discussion, a non-United States holder is any beneficial owner of our common stock that is not a “United States person” or a partnership (including any entity or arrangement treated as a partnership) for United States federal income tax purposes. A United States person is any person that, for United States federal income tax purposes, is or is treated as any of the following:

- an individual who is a citizen or resident of the United States;
- a corporation (or entity treated as a corporation for United States federal income tax purposes) created or organized under the laws of the United States, any state thereof or the District of Columbia;
- an estate, the income of which is subject to United States federal income tax regardless of its source; or
- a trust (1) whose administration is subject to the primary supervision of a United States court and which has one or more United States persons who have the authority to control all substantial decisions of the trust or (2) that has a valid election in effect under applicable Treasury Regulations to be treated as a United States person.

Distributions on Our Common Stock

As described under the section titled “Dividend Policy” in our Annual Report on Form 10-K for the year ended December 31, 2021, we have not paid and do not anticipate paying dividends in the foreseeable future. However, if we make cash or other property distributions on our common stock, such distributions will constitute dividends for United States federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under United States federal income tax principles. Amounts not treated as dividends for United States federal income tax purposes will constitute a return of capital and will first be applied against and reduce a holder’s tax basis in our common stock, but not below zero. Any excess will be treated as gain realized on the sale or other disposition of our common stock and will be treated as described under the section titled “— Gain on Disposition of Our Common Stock” below.

Subject to the discussions below regarding effectively connected income, backup withholding and Sections 1471 through 1474 of the Code (commonly referred to as FATCA), dividends paid to a non-United States holder of our common stock generally will be subject to United States federal withholding tax at a rate of 30% of the gross amount of the dividends or such lower rate specified by an applicable income tax treaty. To receive the benefit of a reduced treaty rate, a non-United States holder must furnish us or our paying agent with a valid IRS Form W-8BEN or IRS Form W-8BEN-E (or applicable successor form) certifying such holder’s qualification for the reduced rate. This certification must be provided to us or our paying agent before the payment of dividends and must be updated periodically. If the non-United States holder holds the stock through a financial institution or other agent acting on the non-United States holder’s behalf, the non-United States holder will be required to provide appropriate documentation to the agent, which then will be required to provide certification to us or our paying agent, either directly or through other intermediaries.

Non-United States holders that do not provide the required certification on a timely basis, but that qualify for a reduced treaty rate, may be eligible to obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS.

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If a non-United States holder holds our common stock in connection with the conduct of a trade or business in the United States, and dividends paid on our common stock are effectively connected with such holder's United States trade or business (and are attributable to such holder's permanent establishment in the United States if required by an applicable tax treaty), the non-United States holder will be exempt from United States federal withholding tax. To claim the exemption, the non-United States holder must generally furnish a valid IRS Form W-8ECI (or applicable successor form) to the applicable withholding agent certifying eligibility for exemption. However, any such effectively connected dividends paid on our common stock generally will be subject to United States federal income tax on a net income basis at the regular graduated United States federal income tax rates in the same manner as if such holder were a resident of the United States. A non-United States holder that is a foreign corporation may also be subject to an additional branch profits tax equal to 30% (or such lower rate specified by an applicable income tax treaty) of its effectively connected earnings and profits for the taxable year (as adjusted for certain items), which will include effectively connected dividends. Non-United States holders should consult their tax advisors regarding any applicable income tax treaties that may provide for different rules.

Gain on Disposition of Our Common Stock

Subject to the discussions below regarding backup withholding and FATCA, a non-United States holder generally will not be subject to United States federal income tax on any gain realized on the sale or other disposition of our common stock, unless:

- the gain is effectively connected with the non-United States holder's conduct of a trade or business in the United States, and if required by an applicable income tax treaty, is attributable to a permanent establishment maintained by the non-United States holder in the United States;
- the non-United States holder is a nonresident alien individual present in the United States for 183 days or more during the taxable year of the disposition, and certain other requirements are met; or
- our common stock constitutes a "United States real property interest" by reason of our status as a United States real property holding corporation ("USRPHC") for United States federal income tax purposes at any time within the shorter of the five-year period preceding the disposition or the non-United States holder's holding period for our common stock, and our common stock is not regularly traded on an established securities market during the calendar year in which the sale or other disposition occurs.

Determining whether we are a USRPHC depends on the fair market value of our United States real property interests relative to the fair market value of our other trade or business assets and our foreign real property interests. We believe that we are not currently and do not anticipate becoming a USRPHC for United States federal income tax purposes, although there can be no assurance we will not in the future become a USRPHC.

Gain described in the first bullet point above generally will be subject to United States federal income tax on a net income basis at the regular graduated United States federal income tax rates in the same manner as if such holder were a resident of the United States. A non-United States holder that is a foreign corporation may also be subject to an additional branch profits tax equal to 30% (or such lower rate specified by an applicable income tax treaty) of its effectively connected earnings and profits for the taxable year (as adjusted for certain items), which will include effectively connected gain. Gain described in the second bullet point above will be subject to United States federal income tax at a flat 30% rate (or such lower rate specified by an applicable income tax treaty), but may be offset by certain United States-source capital losses (even though the individual is not considered a resident of the United States), provided that the non-United States holder has timely filed United States federal income tax returns with respect to such losses. Non-United States holders should consult their tax advisors regarding any applicable income tax treaties that may provide for different rules.

Information Reporting and Backup Withholding

Annual reports are required to be filed with the IRS and provided by the relevant payor to each non-United States holder indicating the amount of dividends on our common stock paid to such holder and the amount of any

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tax withheld with respect to those dividends. These information reporting requirements apply even if no withholding was required because the dividends were effectively connected with the holder's conduct of a United States trade or business, or withholding was reduced or eliminated by an applicable income tax treaty. This information may also be made available under a specific treaty or agreement with the tax authorities in the country in which the non-United States holder resides or is established. Backup withholding, currently at a 24% rate, generally will not apply to payments to a non-United States holder of dividends on or the gross proceeds of a disposition of our common stock provided the non-United States holder furnishes the required certification for its non-United States status, such as by providing a valid IRS Form W-8BEN, IRS Form W-8BEN-E or IRS Form W-8ECI, or certain other requirements are met. Backup withholding may apply if the payer has actual knowledge, or reason to know, that the holder is a United States person who is not an exempt recipient.

Information reporting and backup withholding generally are not required with respect to the amount of any proceeds from the sale or other disposition of our common stock by a non-United States holder outside the United States through a foreign office of a foreign broker that does not have certain specified connections to the United States. However, if a non-United States holder sells or otherwise disposes of its shares of common stock through a United States broker or the United States offices of a foreign broker, the broker will generally be required to report the amount of proceeds paid to the non-United States holder to the IRS and also backup withhold on that amount unless such non-United States holder provides appropriate certification to the broker of its status as a non-United States person (and the payer does not have actual knowledge or reason to know that such holder is a United States person) or otherwise establishes an exemption. Information reporting will also apply if a non-United States holder sells its shares of common stock through a foreign broker deriving more than a specified percentage of its income from United States sources or having certain other connections to the United States, unless such broker has documentary evidence in its records that such non-United States holder is a non-United States person (and the payer does not have actual knowledge or reason to know that such holder is a United States person) and certain other conditions are met, or such non-United States holder otherwise establishes an exemption.

Backup withholding is not an additional tax. If any amount is withheld under the backup withholding rules, the non-United States holder should consult with a United States tax advisor regarding the possibility of and procedure for obtaining a refund or a credit against the non-United States holder's United States federal income tax liability, if any.

Withholding on Foreign Entities

FATCA imposes a United States federal withholding tax of 30% on dividends paid on our common stock to a "foreign financial institution" (as specially defined under these rules) unless such institution enters into an agreement with the United States government to withhold on certain payments and to collect and provide to the United States tax authorities substantial information regarding certain United States account holders of such institution (which includes certain equity and debt holders of such institution, as well as certain account holders that are foreign entities with United States owners) or an exemption applies. FATCA also generally will impose a United States federal withholding tax of 30% on dividends paid on our common stock to a non-financial foreign entity unless such entity provides the withholding agent a certification identifying certain direct and indirect United States owners of the entity or an exemption applies. An intergovernmental agreement between the United States and an applicable foreign country may modify these requirements. Under certain circumstances, a non-United States holder might be eligible for refunds or credits of such taxes. FATCA currently applies to dividends paid on our common stock. The Treasury Secretary has issued proposed regulations providing that the withholding provisions under FATCA do not apply with respect to gross proceeds from a sale or other disposition of our common stock, which may be relied upon by taxpayers until final regulations are issued.

Prospective investors are encouraged to consult with their own tax advisors regarding the possible implications of this legislation on their investment in our common stock.

UNDERWRITING

Under the terms and subject to the conditions in an underwriting agreement dated the date of this prospectus supplement, the underwriter, William Blair & Company, L.L.C. has agreed to purchase, and we have agreed to sell to it, the number of shares indicated below:

<u>Name</u>	<u>Number of Shares</u>
William Blair & Company, L.L.C.	\$
Total	\$

The underwriter is offering the shares of common stock subject to its acceptance of the shares from us and subject to prior sale. The underwriting agreement provides that the obligations of the underwriter to pay for and accept delivery of the shares of common stock offered by this prospectus supplement are subject to the approval of certain legal matters by their counsel and to certain other conditions. The underwriter is obligated to take and pay for all of the shares of common stock offered by this prospectus supplement if any such shares are taken. However, the underwriter is not required to take or pay for the shares covered by the underwriter's option to purchase additional shares described below.

The underwriter initially proposes to offer part of the shares of common stock directly to the public at the offering price listed on the cover page of this prospectus supplement and part to certain dealers at a price that represents a concession not in excess of \$ per share under the public offering price. After the public offering of the shares of common stock, the offering price and other selling terms may from time to time be varied.

We have granted to the underwriter an option, exercisable for 30 days from the date of this prospectus supplement, to purchase up to additional shares of common stock at the public offering price listed on the cover page of this prospectus supplement, less underwriting discounts and commissions.

The following table shows the per share and total public offering price, underwriting discounts and commissions, and proceeds before expenses to us. These amounts are shown assuming both no exercise and full exercise of the underwriter's option to purchase up to an additional shares of common stock.

	<u>Per Share</u>	<u>Total</u>	
		<u>No Exercise</u>	<u>Full Exercise</u>
Public offering price	\$	\$	\$
Underwriting discounts and commissions to be paid by us:	\$	\$	\$
Proceeds, before expenses, to us	\$	\$	\$

The estimated offering expenses payable by us, exclusive of the underwriting discounts and commissions, are approximately \$. We have agreed to reimburse the underwriter for expenses relating to clearance of this offering with the Financial Industry Regulatory Authority up to \$40,000.

Our common stock is listed on The NASDAQ Global Market under the symbol "BDSX."

We and all of our directors and officers and certain holders of our outstanding common stock have agreed that, without the prior written consent of the underwriter, we and they will not, and will not publicly disclose an intention to, during the period ending 90 days after the date of this prospectus supplement (the "restricted period"):

- offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend or otherwise transfer or dispose of, directly or indirectly, any shares of common stock or any securities convertible into or exercisable or exchangeable for shares of common stock;

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- file any registration statement with the Securities and Exchange Commission relating to the offering of any shares of common stock or any securities convertible into or exercisable or exchangeable for common stock; or
- enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of the common stock;

whether any such transaction described above is to be settled by delivery of common stock or such other securities, in cash or otherwise. In addition, we and each such person agrees that, without the prior written consent of the underwriter, we or such other person will not, during the restricted period, make any demand for, or exercise any right with respect to, the registration of any shares of common stock or any security convertible into or exercisable or exchangeable for common stock.

The restrictions described in the immediately preceding paragraph do not apply to us in certain circumstances, subject to certain limitations and conditions set forth in the underwriting agreement, including:

- (a) the issuance and sale of shares of common stock in this offering;
- (b) the issuance of shares of our common stock upon the conversion of securities or the exercise of warrants outstanding as of the date of this prospectus supplement;
- (c) the issuance and sale of shares of common stock or options to purchase shares to employees, officers, directors, advisors or consultants pursuant to employee benefit plans described in this prospectus supplement;
- (d) the filing by us of registration statements on Form S-8 with respect to the employee benefit plans described in this prospectus supplement;
- (e) the sale or issuance by us of, or our entry into an agreement to sell or issue shares of our common stock in connection with our acquisition of one or more businesses, products, assets or technologies (whether by means of merger, stock purchase, asset purchase or otherwise) or in connection with joint ventures, collaboration or licensing agreements, marketing or distribution arrangements, commercial relationships or other strategic transactions, provided that the aggregate number of shares of common stock that we may sell or issue or agree to sell or issue shall not exceed 5% of the total number of shares of common stock issued and outstanding immediately following the completion of this offering; and
- (f) facilitating the establishment of a trading plan on behalf of a shareholder, officer or director of the Company pursuant to Rule 10b5-1 under the Exchange Act for the transfer of shares of common stock, provided that (i) such plan does not provide for the transfer of common stock during the restricted period and (ii) to the extent a public announcement or filing under the Exchange Act, if any, is required of or voluntarily made by us regarding the establishment of such plan, such announcement or filing shall include a statement to the effect that no transfer of common stock may be made under such plan during the restricted period.

In addition, with respect to our directors, officers and certain holders of our outstanding common stock, the restrictions described above do not apply in certain circumstances, subject to certain limitations and conditions set forth in the lock-up agreements, including:

- (a) transactions relating to shares of common stock or other securities acquired in open market transactions after the completion of this offering or as part of this offering (other than issuer-directed shares purchased in this offering);
- (b) transfers of shares of common stock or any other securities convertible into or exercisable or exchangeable for common stock as a bona fide gift;
- (c) transfers of shares of common stock or any other securities convertible into or exercisable or exchangeable for common stock to certain trusts;

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- (d) distributions of shares of common stock or any other securities convertible into or exercisable or exchangeable for common stock to limited partners, general partners, members, stockholders or other equityholders;
- (e) transfers of shares of common stock or any other securities convertible into or exercisable or exchangeable for common stock to affiliates or to certain related investment funds or entities;
- (f) transfers of shares of common stock or any other securities convertible into or exercisable or exchangeable for common stock to any nominee or custodian of a person or entity to whom a transfer or disposition would be permissible under clauses (b) through (e) above;
- (g) transfers of shares of common stock or any other securities convertible into or exercisable or exchangeable for common stock by will or intestate succession;
- (h) transfers of shares of common stock or any other securities convertible into or exercisable or exchangeable for common stock to us in connection with the exercise of options, warrants or other rights to acquire shares of common stock or any security convertible into or exercisable for shares of our common stock by way of net exercise and/or to cover withholding tax obligations in connection with such exercise pursuant to an employee benefit plan, option, warrant or other right disclosed in this prospectus supplement;
- (i) transfers of shares of common stock or any other securities convertible into or exercisable or exchangeable for common stock pursuant to the automatic conversion of outstanding preferred stock or our convertible notes into shares of common stock as described in this prospectus supplement;
- (j) transfers of shares of common stock or any other securities convertible into or exercisable or exchangeable for common stock by operation of law, including pursuant to a court or regulatory agency order, a settlement agreement, a qualified domestic order or in connection with a divorce settlement;
- (k) transfers of shares of common stock or any other securities convertible into or exercisable or exchangeable for common stock to us pursuant to any agreements under which we have the option to repurchase or a right of first refusal with respect to transfers of such shares;
- (l) transfers of shares of common stock or any other securities convertible into or exercisable or exchangeable for common stock to a third party pursuant to a merger, consolidation, bona fide tender offer or other similar transaction made to all holders of shares of the common stock involving a change of control and approved by our board of directors; and
- (m) facilitating the establishment of a trading plan on behalf of a shareholder, officer or director of the Company pursuant to Rule 10b5-1 under the Exchange Act for the transfer of shares of common stock, provided that (i) such plan does not provide for the transfer of common stock during the restricted period and (ii) to the extent a public announcement or filing under the Exchange Act, if any, is required of or voluntarily made by the Company regarding the establishment of such plan, such announcement or filing shall include a statement to the effect that no transfer of common stock may be made under such plan during the restricted period.

The underwriter, in its sole discretion, may release the common stock and other securities subject to the lock-up agreements described above in whole or in part at any time.

In order to facilitate the offering of the common stock, the underwriter may engage in transactions that stabilize, maintain or otherwise affect the price of the common stock. Specifically, the underwriter may sell more shares than they are obligated to purchase under the underwriting agreement, creating a short position. A short sale is covered if the short position is no greater than the number of shares available for purchase by the underwriter under the over-allotment option described above. The underwriter can close out a covered short sale by exercising the over-allotment option or purchasing shares in the open market. In determining the source of shares to close out a covered short sale, the underwriter will consider, among other things, the open market price

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of shares compared to the price available under the option to purchase additional shares. The underwriter may also sell shares in excess of the option to purchase additional shares, creating a naked short position. The underwriter must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriter is concerned that there may be downward pressure on the price of the common stock in the open market after pricing that could adversely affect investors who purchase in this offering. As an additional means of facilitating this offering, the underwriter may bid for, and purchase, shares of common stock in the open market to stabilize the price of the common stock. These activities may raise or maintain the market price of the common stock above independent market levels or prevent or delay a decline in the market price of the common stock. The underwriter is not required to engage in these activities and may end any of these activities at any time.

We and the underwriter have agreed to indemnify each other against certain liabilities, including liabilities under the Securities Act.

A prospectus supplement in electronic format may be made available on websites maintained by the underwriter or any selling group members participating in this offering. The underwriter may allocate a number of shares of common stock for sale to their online brokerage account holders. Internet distributions will be allocated on the same basis as other allocations.

Other Relationships

The underwriter and its affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. The underwriter and its affiliates have, from time to time, performed, and may in the future perform, various financial advisory and investment banking services for us, for which they received or will receive customary fees and expenses.

In addition, in the ordinary course of their various business activities, the underwriter and its affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers and may at any time hold long and short positions in such securities and instruments. Such investment and securities activities may involve our securities and instruments. The underwriter and its affiliates may also make investment recommendations or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long or short positions in such securities and instruments.

Selling Restrictions

Canada

The shares of our common stock may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the Securities Act (Ontario), and are permitted clients, as defined in National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations. Any resale of the shares of our common stock must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

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Pursuant to section 3A.3 (or, in the case of securities issued or guaranteed by the government of a non-Canadian jurisdiction, section 3A.4) of National Instrument 33-105 Underwriting Conflicts (NI 33-105), the underwriter is not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

European Economic Area

In relation to each Member State of the European Economic Area (each a “Relevant State”), no shares of our common stock have been offered or will be offered pursuant to the offering to the public in that Relevant State prior to the publication of a prospectus in relation to the shares of our common stock which has been approved by the competent authority in that Relevant State or, where appropriate, approved in another Relevant State and notified to the competent authority in that Relevant State, all in accordance with the Prospectus Regulation, except that it may make an offer to the public in that Relevant State of any shares of our common stock at any time under the following exemptions under the Prospectus Regulation:

- (a) to any legal entity which is a qualified investor as defined in the Prospectus Regulation;
- (b) to fewer than 150 natural or legal persons (other than qualified investors as defined in the Prospectus Regulation), subject to obtaining the prior consent of the underwriter; or
- (c) in any other circumstances falling within Article 1(4) of the Prospectus Regulation,

provided that no such offer of the shares of our common stock shall require us or the underwriter to publish a prospectus pursuant to Article 3 of the Prospectus Regulation or supplement a prospectus pursuant to Article 23 of the Prospectus Regulation.

For the purposes of this provision, the expression an “offer to the public” in relation to the shares of our common stock in any Relevant State means the communication in any form and by any means of sufficient information on the terms of the offer and any shares of our common stock to be offered so as to enable an investor to decide to purchase or subscribe for any shares of our common stock, and the expression “Prospectus Regulation” means Regulation (EU) 2017/1129 (as amended).

United Kingdom

No shares of our common stock have been offered or will be offered pursuant to the offering to the public in the United Kingdom prior to the publication of a prospectus in relation to the shares of our common stock which has been approved by the Financial Conduct Authority, except that it may make an offer to the public in the United Kingdom of any shares of our common stock at any time:

- (a) to any legal entity which is a qualified investor as defined under the Prospectus Regulation;
- (b) to fewer than 150 natural or legal persons (other than qualified investors as defined under Article 2 of the UK Prospectus Regulation), subject to obtaining the prior consent of the underwriter for any such offer; or
- (c) in any other circumstances falling within Section 86 of the FSMA,

provided that no such offer of the shares of our common stock shall require us or the underwriter to publish a prospectus pursuant to Section 85 of the FSMA or supplement a prospectus pursuant to Article 23 of the UK Prospectus Regulation.

For the purposes of this provision, the expression an “offer to the public” in relation to the shares of our common stock in the United Kingdom means the communication in any form and by any means of sufficient information on the terms of the offer and any shares of our common stock to be offered so as to enable an investor to decide to purchase or subscribe for any shares of our common stock and the expression “UK Prospectus Regulation”

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means Regulation (EU) 2017/1129 as it forms part of domestic law by virtue of the European Union (Withdrawal) Act 2018 and the expression “FSMA” means the Financial Services and Markets Act 2000.

Japan

No registration pursuant to Article 4, paragraph 1 of the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948, as amended) (the “FIEL”) has been made or will be made with respect to the solicitation of the application for the acquisition of the shares of common stock.

Accordingly, the shares of common stock have not been, directly or indirectly, offered or sold and will not be, directly or indirectly, offered or sold in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan) or to others for re-offering or re-sale, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan except pursuant to an exemption from the registration requirements, and otherwise in compliance with, the FIEL and the other applicable laws and regulations of Japan.

For Qualified Institutional Investors (“QII”)

Please note that the solicitation for newly-issued or secondary securities (each as described in Paragraph 2, Article 4 of the FIEL) in relation to the shares of common stock constitutes either a “QII only private placement” or a “QII only secondary distribution” (each as described in Paragraph 1, Article 23-13 of the FIEL). Disclosure regarding any such solicitation, as is otherwise prescribed in Paragraph 1, Article 4 of the FIEL, has not been made in relation to the shares of common stock. The shares of common stock may only be transferred to QIIs.

For Non-QII Investors

Please note that the solicitation for newly-issued or secondary securities (each as described in Paragraph 2, Article 4 of the FIEL) in relation to the shares of common stock constitutes either a “small number private placement” or a “small number private secondary distribution” (each as is described in Paragraph 4, Article 23-13 of the FIEL). Disclosure regarding any such solicitation, as is otherwise prescribed in Paragraph 1, Article 4 of the FIEL, has not been made in relation to the shares of common stock. The shares of common stock may only be transferred en bloc without subdivision to a single investor.

Switzerland

The shares may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange (“SIX”) or on any other stock exchange or regulated trading facility in Switzerland. This document does not constitute a prospectus within the meaning of, and has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document nor any other offering or marketing material relating to the shares or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering or marketing material relating to the offering, the Company, the shares have been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of shares will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA (“FINMA”), and the offer of shares has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes (“CISA”). The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of shares.

LEGAL MATTERS

The validity of the shares of common stock offered hereby will be passed upon for us by Sidley Austin LLP, San Francisco, California. Certain legal matters in connection with this offering will be passed upon for the underwriter by Davis Polk & Wardwell LLP, New York, New York. Partners of Sidley Austin LLP own less than 1% of our outstanding common stock.

EXPERTS

The financial statements of Biodesix, Inc. as of December 31, 2021 and 2020, and for the years then ended, have been incorporated by reference herein and in the registration statement in reliance upon the report of KPMG LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3 under the Securities Act, of which this prospectus supplement and the accompanying prospectus form a part. This prospectus supplement does not contain all of the information set forth in the registration statement, of which it is a part, and its exhibits and schedules in accordance with SEC rules and regulations. For further information with respect to us and the securities being offered hereby, you should read the registration statement, including its exhibits and schedules. Statements contained in this prospectus supplement, including documents that we have incorporated by reference, as to the contents of any contract or other document referred to are not necessarily complete, and, with respect to any contract or other document filed as an exhibit to the registration statement or any other such document, each such statement is qualified in all respects by reference to the corresponding exhibit. You should review the complete contract or other document to evaluate these statements. You may obtain copies of the registration statement and its exhibits via the SEC's website at <http://www.sec.gov>.

We are subject to the information and periodic reporting requirements of the Exchange Act, and we file annual, quarterly and current reports, proxy statements and other documents with the SEC. The SEC maintains a website that contains reports, proxy and information statements and other information regarding issuers, including us, that file electronically with the SEC. You may obtain documents that we file with the SEC at <http://www.sec.gov>.

We also make these documents available on our website at www.biodesix.com. Our website and the information contained or accessible through our website is not incorporated by reference into this prospectus supplement, and you should not consider it a part of this prospectus supplement, the accompanying prospectus or the registration statement of which they are a part.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

SEC rules permit us to incorporate information by reference in this prospectus supplement and the accompanying prospectus. This means that we can disclose important information to you by referring you to another document filed separately with the SEC. The information incorporated by reference is considered to be part of this prospectus supplement, except for information superseded by information contained in this prospectus supplement itself or in any subsequently filed incorporated document. This prospectus supplement incorporates by reference the documents set forth below that we have previously filed with the SEC (Commission File No. 001-39659), other than information in such documents that is deemed to be furnished and not filed. These documents contain important information about us and our business and financial condition.

- Annual Report on [Form 10-K](#) for the year ended December 31, 2021, filed with the SEC on March 14, 2022;
- Quarterly Reports on Form 10-Q for the periods ended [March 31, 2022](#), [June 30, 2022](#) and [September 30, 2022](#), filed with the SEC on May 11, 2022, August 4, 2022 and November 3, 2022, respectively;
- Current Reports on Form 8-K, filed with the SEC on [January 4, 2022](#), [February 14, 2022](#), [March 7, 2022](#), [April 11, 2022](#) and [May 25, 2022](#);
- the information specifically incorporated by reference into our Annual Report on [Form 10-K](#) from our [Definitive Proxy Statement on Schedule 14A](#), filed with the SEC on March 31, 2022; and
- The description of our common stock contained in our Registration Statement on [Form 8-A](#), dated October 26, 2020.

All documents that we file (but not those that we furnish) pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act, on or after the date of this prospectus supplement and prior to the termination of the offering of

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our shares of common stock covered in this prospectus supplement shall be deemed to be incorporated by reference into this prospectus supplement and will automatically update and supersede the information in this prospectus supplement, the accompanying prospectus and any previously filed documents.

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

You can obtain any of the filings incorporated by reference into this prospectus supplement through us or from the SEC through the SEC's website at <http://www.sec.gov>. Upon request, we will provide, without charge, a copy of any or all of the reports and documents referred to above which have been incorporated by reference into this prospectus supplement. Prospective investors may obtain documents incorporated by reference in this prospectus supplement by requesting them in writing or by telephone from us at our executive offices at:

Biodesix, Inc.
2970 Wilderness Place, Suite 100
Boulder, Colorado 80301 (303) 417-0500

Our reports and documents incorporated by reference herein may also be found in the "Investor Relations" section of our website at www.biodesix.com. The content of our website and any information that is linked to or accessible from our website (other than our filings with the SEC that are incorporated by reference, as set forth under "Incorporation of Certain Information by Reference") is not incorporated by reference into this prospectus supplement and you should not consider it a part of this prospectus supplement, the accompanying prospectus or the registration statement of which they are a part.

PROSPECTUS



\$250,000,000

BIODESIX, INC.

Common Stock

Preferred Stock

Warrants

Rights to Purchase Common Stock, Preferred Stock or Units

Units

We may offer and sell from time to time our shares of common stock, shares of preferred stock, warrants, rights to purchase common stock, preferred stock or units, as well as units that include any of these securities. We may sell any combination of these securities in one or more offerings with an aggregate offering price of up to \$250,000,000.

This prospectus provides a general description of the securities we may offer. Each time we offer securities pursuant to this prospectus, we will provide a prospectus supplement containing specific terms of the particular offering together with this prospectus. You should read this prospectus and the applicable prospectus supplement carefully before you invest in any securities. The prospectus supplement also may add, update or change information contained in this prospectus.

This prospectus may not be used to offer and sell securities unless accompanied by the applicable prospectus supplement.

Our common stock is listed on the Nasdaq Global Market under the symbol "BDSX." On November 23, 2021, the last reported sale price of our common stock was \$6.29.

We may sell the securities directly or to or through underwriters or dealers, and also to other purchasers or through agents. The names of any underwriters or agents that are included in a sale of securities to you, and any applicable commissions or discounts, will be stated in an accompanying prospectus supplement. In addition, the underwriters, if any, may over-allot a portion of the securities.

We are an "emerging growth company" and a "smaller reporting company" under federal securities laws and as such, have elected to comply with reduced public company reporting requirements for this prospectus and the documents incorporated by reference herein and may elect to comply with reduced public company reporting requirements in future filings. See "Summary—Implications of Being an Emerging Growth Company and Smaller Reporting Company."

Investing in our securities involves significant risks. We strongly recommend that you read carefully the risks we describe in this prospectus and in any accompanying prospectus supplement, as well as the risk factors that are incorporated by reference into this prospectus from our filings made with the Securities and Exchange Commission. See "[Risk Factors](#)" on page 2 of this prospectus.

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

The date of this prospectus is November 29, 2021

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, (the “SEC”), using a “shelf” registration process. Under this shelf registration process, we may offer and sell from time to time any combination of the securities described in this prospectus in one or more offerings in amounts, at prices and on terms that we determine at the time of the offering, with an aggregate offering price of up to \$250,000,000. This prospectus provides you with a general description of the securities we may offer.

Each time we offer securities, we will provide a prospectus supplement that describes the terms of the relevant offering. The prospectus supplement also may add, update or change information contained in this prospectus. Before making an investment decision, you should read carefully both this prospectus and any prospectus supplement together with the documents incorporated by reference into this prospectus as described below under the heading “Information Incorporated by Reference.”

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

You should read both this prospectus and any accompanying prospectus supplement together with the additional information incorporated by reference. See “Where You Can Find More Information” and “Information Incorporated by Reference.” We have not authorized anyone to provide you with different information. You should not assume that the information in this prospectus or any supplement to this prospectus is accurate at any date other than the date indicated on the cover page of these documents or the filing date of any document incorporated by reference, regardless of its time of delivery. We are not making an offer to sell the securities in any jurisdiction where the offer or sale is not permitted.

We may sell our securities to or through underwriters, dealers or agents, directly to purchasers or through a combination of any of these methods of sale, as designated from time to time. We and our agents reserve the sole right to accept or reject in whole or in part any proposed purchase of our securities. An applicable prospectus supplement, which we will provide each time we offer the securities, will set forth the names of any underwriters, dealers or agents involved in the sale of our securities, and any related fee, commission or discount arrangements. See “Plan of Distribution.”

This summary highlights selected information from this prospectus and does not contain all of the information that you need to consider in making your investment decision. You should carefully read the entire prospectus, the applicable prospectus supplement and any related free writing prospectus, including the risks of investing in our securities discussed under the heading “Risk Factors” contained in the applicable prospectus supplement and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus. You should also carefully read the information incorporated by reference into this prospectus, including our financial statements, and the exhibits to the registration statement of which this prospectus is a part.

The terms “Biodesix,” the “Company,” “our,” “us” and “we,” as used in this prospectus, refer to Biodesix, Inc., unless we state otherwise or the context indicates otherwise.

RISK FACTORS

Investing in our securities involves a high degree of risk. You should carefully consider the specific risks discussed or incorporated by reference into the applicable prospectus supplement, together with all the other information contained in the prospectus or incorporated by reference into this prospectus and the applicable prospectus supplement. You should also consider the risks, uncertainties and assumptions discussed under the caption “Risk Factors” included in our Annual Report on Form 10-K for the year ended December 31, 2020 and in our Quarterly Reports on Form 10-Q for the periods ended March 31, June 30 and September 30, 2021, and in subsequent filings, which are incorporated by reference into this prospectus. These risk factors may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future or by a prospectus supplement relating to a particular offering of our securities. The occurrence of additional risks and uncertainties not presently known to us or that we currently believe to be immaterial could materially and adversely affect our business, financial condition and results of operations. In such case, the trading price of our common stock could decline, and you may lose all or part of your investment. This prospectus also contains forward-looking statements and estimates that involve risks and uncertainties. Our actual results could differ materially from those anticipated in the forward-looking statements as a result of specific factors.

FORWARD-LOOKING STATEMENTS

This prospectus includes and incorporates by reference “forward-looking statements” within the meaning of the U.S. Private Securities Litigation Reform Act of 1995 and releases issued by the SEC and within the meaning of Section 27A of the Securities Act, and Section 21E of the Exchange Act. All statements other than statements of historical fact are “forward-looking statements” for purposes of this prospectus. In some cases, you can identify forward-looking statements by terminology such as “may,” “could,” “will,” “would,” “should,” “expect,” “plan,” “anticipate,” “believe,” “estimate,” “intend,” “predict,” “seek,” “contemplate,” “project,” “continue,” “potential,” “ongoing,” “goal,” or the negative of these terms or other comparable terminology. These forward-looking statements include, but are not limited to, statements about:

- the impact of a pandemic, epidemic, or outbreak of an infectious disease in the United States or worldwide, including the continuing spread of COVID-19 (including notable and severe mutations of the virus) may have a material adverse effect on our operations, our ability to generate revenues and income, and our ability to maintain compliance with our debt covenants and, under certain circumstances, remain a going concern;
- our inability to achieve or sustain profitability;
- our ability to attain significant market acceptance among payers, providers, clinics, patients, and biopharmaceutical companies for our diagnostic tests;
- difficulties managing our growth, which could disrupt our operations;
- failure to retain sales and marketing personnel, and failure to increase our sales and marketing capabilities or develop broad awareness of our diagnostic tests to generate revenue growth;
- failure to maintain our current relationships, or enter into new relationships, with biopharmaceutical companies;
- significant fluctuation in our operating results, causing our operating results to fall below expectations or any guidance we provide;
- the demand for our COVID-19 and antibody testing program and our ability to meet such demand;
- product performance and reliability to maintain and grow our business;
- third-party suppliers, including courier services, contract manufacturers and single source suppliers; making us vulnerable to supply problems and price fluctuations;

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- natural or man-made disasters and other similar events, including the COVID-19 pandemic, negatively impacting our business, financial condition, and results of operations;
- failure to offer high-quality support for our diagnostic tests, which may adversely affect our relationships with providers and negatively impact our reputation among patients and providers;
- our inability to continue to innovate and improve our diagnostic tests and services we offer;
- security or data privacy breaches or other unauthorized or improper access;
- significant disruptions in our information technology systems;
- the incurrence of substantial liabilities and limiting or halting the marketing and sale of our diagnostic tests due to product liability lawsuits;
- our inability to compete successfully with competition from many sources, including larger companies;
- performance issues, service interruptions or price increases by our shipping carriers and warehousing providers;
- cost-containment efforts of our customers, purchasing groups and integrated delivery networks having a material adverse effect on our sales and profitability;
- potential effects of litigation and other proceedings;
- general economic and financial market conditions;
- our ability to attract and retain key personnel;
- current and future debt financing placing restrictions on our operating and financial flexibility;
- our need to raise additional capital to fund our existing operations, develop our platform, commercialize new diagnostic tests, or expand our operations;
- the acquisition of other businesses, which could require significant management attention;
- the uncertainty of the insurance coverage and reimbursement status of newly approved diagnostic tests;
- future healthcare reform measures that could hinder or prevent the commercial success of our diagnostic tests;
- compliance with anti-corruption, anti-bribery, anti-money laundering and similar laws;
- compliance with healthcare fraud and abuse laws;
- our ability to develop, receive regulatory clearance or approval or certification for, and introduce new diagnostic tests or enhancements to existing diagnostic tests that will be accepted by the market in a timely manner;
- failure to comply with ongoing FDA or other domestic and foreign regulatory authority requirements, or unanticipated problems with our diagnostic tests, causing them to be subject to restrictions or withdrawal from the market;
- future product recalls;
- legal proceedings initiated by third parties alleging that we are infringing, misappropriating, or otherwise violating their intellectual property rights, the outcome of which would be uncertain;
- the volatility of the trading price of our common stock;
- inaccurate estimates or judgments relating to our critical accounting policies, which could cause our operating results to fall below the expectations of securities analysts and investors; and
- other risks, uncertainties and factors, including those set forth under “Risk Factors”.

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These statements relate to future events or to our future financial performance and involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by these forward-looking statements. In evaluating such forward-looking statements, you should specifically consider various factors that may cause actual results to differ materially from current expectations, including the risks outlined under the heading “Risk Factors” contained in this prospectus and any related free writing prospectus, and in any other documents incorporated herein or therein. Any forward-looking statement in this prospectus reflects our current view with respect to future events and is subject to these and other risks, uncertainties and assumptions relating to our operations, results of operations, industry and future growth. Given these uncertainties, you should not place undue reliance on these forward-looking statements. Except as required by law, we assume no obligation to update or revise these forward-looking statements for any reason, even if new information becomes available in the future.

This prospectus and the documents incorporated by reference may also contain estimates, projections and other information concerning our industry and our business, including estimated market size, projected growth rates and the incidence of certain medical conditions. Information that is based on estimates, forecasts, projections or similar methodologies is inherently subject to uncertainties and actual events or circumstances may differ materially from events and circumstances reflected in this information. Unless otherwise expressly stated, we obtained this industry, business, market, medical and other information from reports, research surveys, studies and similar data prepared by third parties, industry, medical and general publications, government data and similar sources. In some cases, we do not expressly refer to the sources from which this information is derived. In that regard, when we refer to one or more sources of this type of information in any paragraph, you should assume that other information of this type appearing in the same paragraph is derived from the same sources, unless otherwise expressly stated or the context otherwise requires.

BIODESIX, INC.

Company Overview

Biodesix is a data-driven diagnostic solutions company leveraging state of the art technologies with its proprietary artificial intelligence platform to discover, develop, and commercialize solutions for clinical unmet needs, with a primary focus in lung disease. In addition to diagnostic tests, the Company provides biopharmaceutical companies with services that include diagnostic research, clinical trial testing, and the discovery, development, and commercialization of companion diagnostics.

The Company performs its blood-based diagnostic tests in its laboratory facilities, which are located in Boulder, Colorado and De Soto, Kansas. In May 2020, the Federal Drug Administration (FDA) granted Emergency Use Authorization (EUA) of the Bio-Rad SARS-CoV-2 Droplet Digital™ polymerase chain reaction (ddPCR) test to detect Coronavirus Disease 2019 (COVID-19) infection. In April 2020, the FDA authorized the Platelia SARS-CoV-2 Total Ab test to detect COVID-19 antibodies. Medical products that are granted an EUA are only permitted to commercialize their products under the terms and conditions provided in the authorization. The FDA may revoke an EUA where it is determined that the underlying health emergency no longer exists or warrants such authorization, if the conditions for the issuance of the EUA are no longer met, or if other circumstances make revocation appropriate to protect the public health or safety.

Blood-Based Lung Tests

The Company offers four blood-based lung cancer tests across the lung cancer continuum of care:

- *Nodify XL2*® and *Nodify CDT*™ tests, marketed as our Nodify Lung® Nodule Risk Assessment testing strategy, assess the risk of lung cancer to help identify the most appropriate treatment pathway. We believe we are the only company to offer two commercial blood-based tests to help physicians reclassify risk of malignancy in patients with suspicious lung nodules.
- *GeneStrat*® and *VeriStrat*® tests, marketed as our Biodesix Lung Reflex® testing strategy, are used following diagnosis of lung cancer to measure the presence of mutations in the tumor and the state of the patient's immune system to establish the patient's prognosis and help guide treatment decisions. The GeneStrat targeted tumor profiling test and the VeriStrat immune profiling test have a 36-hour average turnaround time, providing physicians with timely results to facilitate treatment decisions.

COVID-19 Tests

We operate and have commercialized the Biodesix WorkSafe™ testing program, under which the Company offers three SARS-CoV-2 tests:

- *Bio-Rad SARS-CoV-2 ddPCR* test, which is authorized by the FDA to be performed by Clinical Laboratory Institute Amendments (CLIA) authorized laboratories that perform high complexity tests. The ddPCR test is designed to detect the presence of infection by the SARS-CoV-2 virus.
- *Platelia SARS-CoV-2 Total Ab* test, which is an antibody test, authorized by the FDA, intended for detecting a B-cell immune response to SARS-CoV-2, indicating recent or prior infection.
- *cPass*™ *SARS-CoV-2 Neutralization Antibody* test, which is the first blood-based surrogate neutralizing antibody test with FDA EUA and uses ELISA technology to qualitatively detect circulating neutralizing antibodies to the receptor binding domain (RBD) in the spike protein of SARS-CoV-2 that are produced in response to vaccination or a previous SARS-CoV-2 infection. This test was commercially introduced during the second quarter 2021 in partnership with GenScript Biotech Corporation.

These tests under the Biodesix WorkSafe™ testing program are utilized by healthcare providers, including hospitals and nursing homes, and are also offered to businesses and educational systems to assist in their back-to-work or back-to-school strategies, a crucial element of restarting economic activity.

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In developing the Company's products, the Company has built or gained access to unique biorepositories, proprietary technology, and bioinformatics methods that it believes are important to the development of new targeted therapies, determining clinical trial eligibility and guiding treatment selection.

All of the Company's testing services are made available through its clinical laboratories.

Implications of Being an Emerging Growth Company and Smaller Reporting Company

We are an "emerging growth company" within the meaning of the Jumpstart Our Business Startups Act (JOBS Act). As an emerging growth company, we may take advantage of certain exemptions from various public company reporting requirements, including the requirement that our internal control over financial reporting be audited by our independent registered public accounting firm pursuant to Section 404 of the Sarbanes-Oxley Act of 2002, certain requirements related to the disclosure of executive compensation in this prospectus and in our periodic reports and proxy statements, the requirement that we hold a nonbinding advisory vote on executive compensation and any golden parachute payments, and we have taken advantage of the ability to provide reduced disclosure of financial information in this prospectus, such as being permitted to include only two years of audited financial information and two years of selected financial information in addition to any required unaudited interim financial statements, with correspondingly reduced "Management's Discussion and Analysis of Financial Condition and Results of Operations" disclosure. We may take advantage of these exemptions until we are no longer an emerging growth company. Section 107 of the JOBS Act provides that an "emerging growth company" can take advantage of the extended transition period provided in Section 7(a)(2)(B) of the Securities Act of 1933, as amended (the "Securities Act"), for complying with new or revised accounting standards. In other words, an "emerging growth company" can delay the adoption of certain accounting standards until those standards would otherwise apply to private companies.

We have elected to take advantage of the extended transition period to comply with new or revised accounting standards and to adopt certain of the reduced disclosure requirements available to emerging growth companies. As a result of the accounting standards election, we will not be subject to the same implementation timing for new or revised accounting standards as other public companies that are not emerging growth companies, which may make comparison of our financials to those of other public companies more difficult. Additionally, because we have taken advantage of certain reduced reporting requirements, the information contained herein may be different from the information you receive from other public companies in which you hold stock.

We will remain an emerging growth company until the earliest to occur of (i) the last day of the fiscal year in which we have more than \$1.07 billion in annual revenue; (ii) the date we qualify as a "large accelerated filer," with at least \$700 million of equity securities held by non-affiliates; (iii) the date on which we have issued, in any three-year period, more than \$1.0 billion in non-convertible debt securities; and (iv) the last day of the fiscal year ending after the fifth anniversary of the completion of our initial public offering.

Additionally, we are a "smaller reporting company" as defined in Item 10(f)(1) of Regulation S-K. Smaller reporting companies may take advantage of certain reduced disclosure obligations, including, among other things, providing only two years of audited financial statements. We will remain a smaller reporting company until the last day of the fiscal year in which (i) the market value of our common stock held by non-affiliates exceeds \$250 million as of the end of that year's second fiscal quarter, or (ii) our annual revenues exceeded \$100 million during such completed fiscal year and the market value of our common stock held by non-affiliates exceeds \$700 million as of the end of that year's second fiscal quarter. To the extent we take advantage of such reduced disclosure obligations, it may also make comparison of our financial statements with other public companies difficult or impossible.

For certain risks related to our status as an emerging growth company, see "Risk Factors—Risks Related to our Common Stock and this Offering—We are an "emerging growth company" and a "smaller reporting

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company,” and the reduced disclosure requirements applicable to emerging growth companies and smaller reporting companies may make our common stock less attractive to investors.”

Corporate Information

We were incorporated in Delaware in 2005 as Elston Technologies, Inc. Our principal executive offices are located at 2970 Wilderness Place, Suite 100, Boulder, Colorado 80301, and our telephone number is (303) 417-0500. On June 20, 2006, we changed our name to Biodesix, Inc.

Our website address is www.biodesix.com. Information contained on, or accessible from, or hyperlinked to, our website is not incorporated by reference into this prospectus, and you should not consider information on our website to be part of this prospectus, or in deciding whether to purchase our securities.

Our filings with the SEC are posted on our website at www.biodesix.com. Other than the specifically incorporated SEC filings, the information found on or accessible through our website is not part of this or any other report we file with or furnish to the SEC. The public can also obtain copies of these filings by accessing the SEC’s website at <http://www.sec.gov>.

USE OF PROCEEDS

We will retain broad discretion over the use of the net proceeds from the sale of the securities offered hereby. Except as described in any prospectus supplement or any related free writing prospectus that we may authorize to be provided to you, we currently intend to use the net proceeds from the sale of the securities offered hereby for general corporate purposes, including working capital, operating expenses and capital expenditures. We may also use a portion of the net proceeds to acquire or invest in businesses and products that are complementary to our own, although we have no current plans, commitments or agreements with respect to any acquisitions as of the date of this prospectus. We will set forth in the applicable prospectus supplement or free writing prospectus our intended use for the net proceeds received from the sale of any securities sold pursuant to the prospectus supplement or free writing prospectus. We intend to invest the net proceeds to us from the sale of securities offered hereby that are not used as described above in short-term, investment-grade, interest-bearing instruments.

DESCRIPTION OF CAPITAL STOCK

The following description is a general summary of the terms of the shares of common stock or shares of preferred stock that we may issue. The description below and in any prospectus supplement does not include all of the terms of the shares of common stock or shares of preferred stock and should be read together with our Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws, copies of which have been filed previously with the SEC. For more information on how you can obtain copies of our Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws, see “Where You Can Find More Information.”

General

Our charter authorizes to issue up to 200,000,000 shares of common stock, \$0.001 par value per share, and 5,000,000 shares of preferred stock, \$0.001 par value per share. The following summary sets forth some of the general terms of our common stock. Because this is a summary, it does not contain all of the information that may be important to you. For a more detailed description of our common stock, you should read our amended and restated certificate of incorporation and the amended and restated bylaws, each of which is an exhibit to our Annual Report on Form 10-K to which this summary is also an exhibit, and the applicable provisions of the Delaware General Corporation Law (the “DGCL”).

Common stock

As of November 12, 2021, we had outstanding 27,020,576 shares of common stock.

Voting Rights

Each holder of common stock is entitled to one vote for each share on all matters submitted to a vote of the stockholders, including the election of directors. Under our amended and restated certificate of incorporation and amended and restated bylaws, our stockholders do not have cumulative voting rights. Because of this, the holders of a majority of the shares of common stock entitled to vote in any election of directors can elect all of the directors standing for election.

Dividends Rights

Subject to preferences that may apply to any then-outstanding preferred stock, the holders of common stock are entitled to receive ratably those dividends, if any, as may be declared from time to time by the Board of Directors out of legally available funds. We do not anticipate paying any cash dividends in the foreseeable future.

Liquidation Rights

In the event of our liquidation, dissolution or winding up, holders of common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities and the satisfaction of any liquidation preference granted to the holders of any then-outstanding shares of preferred stock.

Preemptive or Similar Rights

Holders of common stock have no preemptive, conversion or subscription rights and there are no redemption or sinking fund provisions applicable to the common stock. The rights, preferences and privileges of the holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may designate in the future.

Preferred stock

Our Board of Directors may, without further action by our stockholders, fix the rights, preferences, privileges and restrictions of up to an aggregate of 5,000,000 shares of preferred stock in one or more series and authorize their issuance. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences and the number of shares constituting any series or the designation of such series, any or all of which may be greater than the rights of common stock. Any issuance of preferred stock could adversely affect the voting power of holders of common stock and the likelihood that such holders would receive dividend payments and payments on liquidation. In addition, the issuance of preferred stock could have the effect of delaying, deterring or preventing a change of control or other corporate action. No shares of preferred stock are outstanding. We have no present plan to issue any shares of preferred stock.

Registration rights

We are party to the Eleventh Amended and Restated Investor Rights Agreement (the “IRA”) which provides that certain holders of shares of common stock have the right to demand that we file a registration statement for their shares of our common stock or request that their shares of our common stock be covered by a registration statement that we are otherwise filing, including, in each case, shares of our common stock that were issued upon conversion of convertible preferred stock. These shares are referred to as registrable securities.

The registration of shares of common stock pursuant to the exercise of registration rights described below would enable the holders to trade these shares without restriction under the Securities Act when the applicable registration statement is declared effective. We will pay the registration expenses (other than underwriting discounts, selling commissions and stock transfer taxes) of the shares registered pursuant to the piggyback and Form S-3 registrations described below.

Generally, in an underwritten offering, if we determine in good faith in consultation with the underwriters, we have the right, subject to specified conditions, to limit the number of shares the holders may include. The piggyback and Form S-3 registration rights described below will terminate on the date five years following the closing of our initial public offering.

Form S-3 registration rights

The holders of at least 10% of the registrable securities then outstanding are entitled to certain registration rights on Form S-3. The holders of these shares can request that we register all or a portion of their shares on Form S-3 if we are eligible to file a registration statement on Form S-3 and the aggregate price to the public of the shares offered is in excess of \$5.0 million. We are required to effect no more than two Form S-3 registration statements that are declared or ordered effective in any 12-month period. We may postpone the filing of a registration statement for up to 120 days not more than once in a 12-month period if in the good faith judgment of our Board of Directors such registration would be seriously detrimental to us.

Piggyback registration rights

The holders of registrable securities are entitled to certain piggyback registration rights.

If we register any of our securities for public sale, either for our own account or for the account of other security holders, we will also have to register all registrable securities that the holders of such securities request in writing be registered. This piggyback registration right does not apply to a registration relating to any of our stock plans, stock purchase or similar plan, a transaction under Rule 145 of the Securities Act or a registration related to stock issued upon conversion of debt securities. We, based on consultation with the underwriters of any underwritten offering will have the right to limit the number of shares registered by these holders if the underwriters determine that including all registrable securities will jeopardize the success of the offering.

Expenses of registration

Pursuant to the IRA, we are required to pay all registration expenses, including all registration and filing fees, printing expenses, fees and disbursements of our counsel and reasonable fees and disbursements not to exceed \$75,000 of one counsel representing all Holders, as defined in the IRA, participating in the offering, blue sky fees and expenses and the expense of any special audits incident to or required by any such registration, other than any underwriting discounts and selling commissions attributable to the sale of registrable securities, as defined in the IRA.

The IRA contains customary cross-indemnification provisions, pursuant to which we are obligated to indemnify Holders, as defined in the IRA, beneficially owning registrable securities covered by a registration statement in the event of material misstatements or omissions in the registration statement attributable to us, and each Holder, as defined in the IRA, is obligated to indemnify us for material misstatements or omissions in the registration statement attributable to them.

Certificate of Incorporation and Bylaws

Our amended and restated certificate of incorporation and amended and restated bylaws:

- permit our Board of Directors to issue up to 5,000,000 shares of preferred stock, with any rights, preferences and privileges as they may designate, including the right to approve an acquisition or other change of control;
- provide that the authorized number of directors may be changed only by resolution of our Board of Directors;
- provide that our Board of Directors will be classified into three classes of directors;
- provide that, subject to the rights of any series of preferred stock to elect directors, directors may only be removed for cause, which removal may be effected, subject to any limitation imposed by law, by the holders of at least 66 2/3% of the voting power of all of our then-outstanding shares of the capital stock entitled to vote generally at an election of directors; and
- provide that all vacancies, including newly created directorships, may, except as otherwise required by law, be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum.
- require that any action to be taken by our stockholders must be effected at a duly called annual or special meeting of stockholders and not be taken by written consent or electronic transmission;
- provide that stockholders seeking to present proposals before a meeting of stockholders or to nominate candidates for election as directors at a meeting of stockholders must provide advance notice in writing, and also specify requirements as to the form and content of a stockholder's notice;
- provide that special meetings of our stockholders may be called only by the chairman of our Board of Directors, our chief executive officer or by our Board of Directors pursuant to a resolution adopted by a majority of the total number of authorized directors; and
- do not provide for cumulative voting rights, therefore allowing the holders of a majority of the shares of common stock entitled to vote in any election of directors to elect all of the directors standing for election, if they should so choose.

The amendment of any of these provisions would require approval by the holders of at least 66 2/3% of the voting power of all of our then-outstanding capital stock entitled to vote generally in the election of directors, voting together as a single class.

The combination of these provisions make it more difficult for our existing stockholders to replace our Board of Directors as well as for another party to obtain control of us by replacing our Board of Directors. Since

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our Board of Directors has the power to retain and discharge our officers, these provisions could also make it more difficult for existing stockholders or another party to effect a change in management. In addition, the authorization of undesignated preferred stock makes it possible for our Board of Directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change our control.

These provisions are intended to enhance the likelihood of continued stability in the composition of our Board of Directors and its policies and to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed to reduce our vulnerability to hostile takeovers and to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for our shares and may have the effect of delaying changes in our control or management. As a consequence, these provisions may also inhibit fluctuations in the market price of our stock.

Delaware business combination statute

We are subject to Section 203 of the DGCL. Subject to certain exceptions, Section 203 prevents a publicly held Delaware corporation from engaging in a “business combination” with any “interested stockholder” for three years following the date that the person became an interested stockholder, unless the interested stockholder attained such status with the approval of our Board of Directors or unless the business combination is approved in a prescribed manner. A “business combination” includes, among other things, a merger or consolidation involving us and the “interested stockholder” and the sale of more than 10% of our assets. In general, an “interested stockholder” is any entity or person beneficially owning 15% or more of our outstanding voting stock and any entity or person affiliated with or controlling or controlled by such entity or person.

Amendment of certificate of incorporation and bylaws

DGCL provides generally that the affirmative vote of a majority of the shares entitled to vote on any matter is required to amend a corporation’s certificate of incorporation or bylaws, unless a corporation’s certificate of incorporation or bylaws, as the case may be, requires a greater percentage.

Exclusive forum selection

Our amended and restated certificate of incorporation specifies that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for most legal actions involving actions brought against us by stockholders. Notwithstanding the foregoing, the exclusive forum provision will not apply to any claim to enforce any liability or duty created by the Exchange Act or the Securities Act and for which the federal courts have exclusive jurisdiction. We believe this exclusive forum provision benefits us by providing increased consistency in the application of Delaware law by chancellors particularly experienced in resolving corporate disputes, efficient administration of cases on a more expedited schedule relative to other forums and protection against the burdens of multi-forum litigation. However, the provision may have the effect of discouraging lawsuits against our directors and officers. The enforceability of similar choice of forum provisions in other companies’ certificates of incorporation has been challenged in legal proceedings, and it is possible that, in connection with any applicable action brought against us, a court could find the choice of forum provisions contained in our amended and restated certificate of incorporation to be inapplicable or unenforceable in such action.

Listing on The Nasdaq Global Market

Our common stock is listed on The Nasdaq Global Market under the symbol “BDSX.”

Authorized but unissued shares

The authorized but unissued shares of common stock and preferred stock are available for future issuance without stockholder approval, subject to any limitations imposed by the listing requirements of The Nasdaq

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Global Market. These additional shares may be used for a variety of corporate finance transactions, acquisitions and employee benefit plans. The existence of authorized but unissued and unreserved common stock and preferred stock could make it more difficult or discourage an attempt to obtain control of us by means of a proxy contest, tender offer, merger or otherwise.

Transfer agent and registrar

The transfer agent and registrar for our common stock is Computershare Trust Company, N.A. The transfer agent's address 150 Royall Street, Canton, Massachusetts 02021, and its telephone number is (800) 962-4284.

DESCRIPTION OF WARRANTS

We may issue warrants for the purchase of shares of our common stock or shares of our preferred stock. The following description sets forth certain general terms and provisions of the warrants that we may offer pursuant to this prospectus. The particular terms of the warrants and the extent, if any, to which the general terms and provisions may apply to the warrants so offered will be described in the applicable prospectus supplement.

Warrants may be issued independently or together with other securities and may be attached to or separate from any offered securities. Each series of warrants will be issued under a separate warrant agreement to be entered into between us and a bank or trust company, as warrant agent. The warrant agent will act solely as our agent in connection with the warrants and will not have any obligation or relationship of agency or trust for or with any holders or beneficial owners of warrants.

A copy of the forms of the warrant agreement and the warrant certificate relating to any particular issue of warrants will be filed with the SEC each time we issue warrants, and you should read those documents for provisions that may be important to you. For more information on how you can obtain copies of the forms of the warrant agreement and the related warrant certificate, see “Where You Can Find More Information.”

Stock Warrants

The prospectus supplement relating to a particular issue of warrants to issue shares of our common stock or shares of our preferred stock will describe the terms of the common share warrants and preferred share warrants, including the following:

- the title of the warrants;
- the offering price for the warrants, if any;
- the aggregate number of the warrants;
- the designation and terms of the shares of common stock or shares of preferred stock that may be purchased upon exercise of the warrants;
- the terms for changes or adjustments to the exercise price of the warrants;
- if applicable, the designation and terms of the securities that the warrants are issued with and the number of warrants issued with each security;
- if applicable, the date from and after which the warrants and any securities issued with the warrants will be separately transferable;
- the number of shares of common stock or shares of preferred stock that may be purchased upon exercise of a warrant and the price at which the shares may be purchased upon exercise;
- the dates on which the right to exercise the warrants commence and expire;
- if applicable, the minimum or maximum amount of the warrants that may be exercised at any one time;
- the currency or currency units in which the offering price, if any, and the exercise price are payable;
- if applicable, a discussion of material U.S. Federal income tax considerations;
- anti-dilution provisions of the warrants, if any;
- redemption or call provisions, if any, applicable to the warrants;
- any additional terms of the warrants, including terms, procedures and limitations relating to the exchange and exercise of the warrants; and
- any other information we think is important about the warrants.

Exercise of Warrants

Each warrant will entitle the holder of the warrant to purchase at the exercise price set forth in the applicable prospectus supplement the number of shares of common stock or shares of preferred stock. Unless we otherwise specify in the applicable prospectus supplement, holders may exercise warrants at any time up to the close of business on the expiration date set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants are void. Holders may exercise warrants as set forth in the prospectus supplement relating to the warrants being offered.

Until a holder exercises the warrants to purchase our shares of common stock or shares of preferred stock, the holder will not have any rights as a holder of our shares of common stock or shares of preferred stock, as the case may be, by virtue of ownership of warrants.

Enforceability of Rights by Holders of Warrants

Each warrant agent will act solely as our agent under the applicable warrant agreement and will not assume any obligation or relationship of agency or trust with any holder of any warrant. A single bank or trust company may act as warrant agent for more than one issue of warrants. A warrant agent will have no duty or responsibility in case of any default by us under the applicable warrant agreement or warrant, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a warrant may, without the consent of the related warrant agent or the holder of any other warrant, enforce by appropriate legal action its right to exercise, and receive the securities purchasable upon exercise of, its warrants.

DESCRIPTION OF RIGHTS

The following is a general description of the terms of the rights we may issue from time to time unless we provide otherwise in the applicable prospectus supplement. Particular terms of any rights we offer will be described in the prospectus supplement relating to such rights.

General

We may issue rights to purchase common stock, preferred stock or units. Rights may be issued independently or together with other securities and may or may not be transferable by the person purchasing or receiving the rights. In connection with any rights offering to our stockholders, we may enter into a standby underwriting, backstop or other arrangement with one or more underwriters or other persons pursuant to which such underwriters or other persons would purchase any offered securities remaining unsubscribed for after such rights offering. In connection with a rights offering to our stockholders, we would distribute certificates evidencing the rights and a prospectus supplement to our stockholders on or about the record date that we set for receiving rights in such rights offering.

The applicable prospectus supplement will describe the following terms of any rights we may issue, including some or all of the following:

- the title and aggregate number of the rights;
- the subscription price or a formula for the determination of the subscription price for the rights and the currency or currencies in which the subscription price may be payable;
- if applicable, the designation and terms of the securities with which the rights are issued and the number of rights issued with each such security or each principal amount of such security;
- the number or a formula for the determination of the number of the rights issued to each stockholder;
- the extent to which the rights are transferable;
- in the case of rights to purchase common stock or preferred stock, the type of stock and number of shares of stock purchasable upon exercise of one right;
- the date on which the right to exercise the rights will commence, and the date on which the rights will expire (subject to any extension);
- if applicable, the minimum or maximum amount of the rights that may be exercised at any one time;
- the extent to which such rights include an over-subscription privilege with respect to unsubscribed securities;
- if applicable, the procedures for adjusting the subscription price and number of shares of common stock or preferred stock purchasable upon the exercise of each right upon the occurrence of certain events, including stock splits, reverse stock splits, combinations, subdivisions or reclassifications of common stock or preferred stock;
- the effect on the rights of any merger, consolidation, sale or other disposition of our business;
- the terms of any rights to redeem or call the rights;
- information with respect to book-entry procedures, if any;
- the terms of the securities issuable upon exercise of the rights;
- if applicable, the material terms of any standby underwriting, backstop or other purchase arrangement that we may enter into in connection with the rights offering;
- if applicable, a discussion of material U.S. Federal income tax considerations; and

- any other terms of the rights, including terms, procedures and limitations relating to the exchange and exercise of the rights.

Exercise of Rights

Each right will entitle the holder to purchase for cash or other consideration such shares of stock or principal amount of securities at the subscription price as shall in each case be set forth in, or be determinable as set forth in, the prospectus supplement relating to the rights offered thereby. Rights may be exercised as set forth in the applicable prospectus supplement beginning on the date specified therein and continuing until the close of business on the expiration date set forth in the prospectus supplement relating to the rights offered thereby. After the close of business on the expiration date, unexercised rights will become void.

Upon receipt of payment and a subscription certificate properly completed and duly executed at the corporate trust office of the subscription agent or any other office indicated in the prospectus supplement, we will, as soon as practicable, forward the securities purchasable upon such exercise. If less than all of the rights represented by such subscription certificate are exercised, a new subscription certificate will be issued for the remaining rights. If we so indicate in the applicable prospectus supplement, holders of the rights may surrender securities as all or part of the exercise price for rights.

We may determine to offer any unsubscribed offered securities directly to stockholders, persons other than stockholders, to or through agents, underwriters or dealers or through a combination of such methods, including pursuant to standby underwriting, backstop or other arrangements, as set forth in the applicable prospectus supplement.

Prior to exercising their rights, holders of rights will not have any of the rights of holders of the securities purchasable upon subscription, including, in the case of rights to purchase common stock or preferred stock, the right to receive dividends, if any, or payments upon our liquidation, dissolution or winding up or to exercise any voting rights.

DESCRIPTION OF UNITS

We may issue units comprising one or more securities described in this prospectus in any combination. The following description sets forth certain general terms and provisions of the units that we may offer pursuant to this prospectus. The particular terms of the units and the extent, if any, to which the general terms and provisions may apply to the units so offered will be described in the applicable prospectus supplement.

Each unit will be issued so that the holder of the unit also is the holder of each security included in the unit. Thus, the unit will have the rights and obligations of a holder of each included security. Units will be issued pursuant to the terms of a unit agreement, which may provide that the securities included in the unit may not be held or transferred separately at any time or at any time before a specified date. A copy of the forms of the unit agreement and the unit certificate relating to any particular issue of units will be filed with the SEC each time we issue units, and you should read those documents for provisions that may be important to you. For more information on how you can obtain copies of the forms of the unit agreement and the related unit certificate, see “Where You Can Find More Information.”

The prospectus supplement relating to any particular issuance of units will describe the terms of those units, including, to the extent applicable, the following:

- the designation and terms of the units and the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;
- any provision for the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units; and
- whether the units will be issued in fully registered or global form.

PLAN OF DISTRIBUTION

We may sell the securities offered by this prospectus in any one or more of the following ways from time to time:

- to or through one or more underwriters, brokers or dealers;
- through agents to investors or the public;
- in short or long transactions;
- through put or call option transactions relating to our common stock;
- directly to agents or other purchasers;
- in “at the market offerings” within the meaning of Rule 415(a)(4) of the Securities Act of 1933, as amended, or the Securities Act, to or through a market maker or into an existing trading market, on an exchange or otherwise;
- through a combination of any such methods of sale; or
- through any other method described in the applicable prospectus supplement.

In addition, we may issue the securities as a dividend or distribution or in a subscription rights offering to our existing securityholders. This prospectus may be used in connection with any offering of our securities through any of these methods or other methods described in the applicable prospectus supplement.

We may directly solicit offers to purchase securities, or agents may be designated to solicit such offers. We will, in the prospectus supplement relating to such offering, name any agent that could be viewed as an underwriter under the Securities Act, and describe any commissions that we must pay. Any such agent will be acting on a best efforts basis for the period of its appointment or, if indicated in the applicable prospectus supplement, on a firm commitment basis.

The distribution of the securities may be effected from time to time in one or more transactions:

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

The applicable prospectus supplement will set forth the terms of the offering and the method of distribution and will identify any firms acting as underwriters, dealers or agents in connection with the offering, including:

- the terms of the offering;
- the names of any underwriters, dealers or agents;
- the name or names of any managing underwriter or underwriters;
- the purchase price of the securities and the proceeds to us from the sale;
- any over-allotment options under which the underwriters may purchase additional shares of common stock from us;
- any underwriting discounts, concessions, commissions or agency fees and other items constituting compensation to underwriters, dealers or agents;
- any delayed delivery arrangements;

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- any public offering price;
- any discounts or concessions allowed or re-allowed or paid by underwriters or dealers to other dealers; or
- any securities exchange or market on which the common stock offered in the prospectus supplement may be listed.

If we use underwriters for a sale of securities, the underwriters will acquire the securities for their own account for resale to the public, either on a firm commitment basis or a best efforts basis. The underwriters may resell the securities in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. Underwriters may offer the securities to the public either through underwriting syndicates represented by one or more managing underwriters or directly by one or more firms acting as underwriters. If an underwriter or underwriters are used in the sale of securities hereunder, an underwriting agreement will be executed with the underwriter or underwriters at the time an agreement for sale is reached. Unless we inform you otherwise in the applicable prospectus supplement, the obligations of the underwriters to purchase the securities will be subject to certain conditions. We may change from time to time any public offering price and any discounts or concessions the underwriters allow or pay to dealers.

During and after an offering through underwriters, the underwriters may purchase and sell the securities in the open market. These transactions may include overallocation and stabilizing transactions and purchases to cover syndicate short positions created in connection with the offering. The underwriters may also impose a penalty bid, which means that selling concessions allowed to syndicate members or other broker-dealers for the offered securities sold for their account may be reclaimed by the syndicate if the offered securities are repurchased by the syndicate in stabilizing or covering transactions. These activities may stabilize, maintain or otherwise affect the market price of the offered securities, which may be higher than the price that might otherwise prevail in the open market. If commenced, the underwriters may discontinue these activities at any time.

Under Rule 15c6-1 of the Exchange Act, trades in the secondary market generally are required to settle in two business days, unless the parties to any such trade expressly agree otherwise or the securities are sold by us to an underwriter in a firm commitment underwritten offering. The applicable prospectus supplement may provide that the original issue date for your securities may be more than two scheduled business days after the trade date for your securities. Accordingly, in such a case, if you wish to trade securities on any date prior to the second business day before the original issue date for your securities, you will be required, by virtue of the fact that your securities initially are expected to settle in more than two scheduled business days after the trade date for your securities, to make alternative settlement arrangements to prevent a failed settlement.

Some or all of the securities that we offer through this prospectus may be new issues of securities with no established trading market. Any underwriters to whom we sell our securities for public offering and sale may make a market in those securities, but they will not be obligated to do so and they may discontinue any market making at any time without notice. Accordingly, we cannot assure you of the liquidity of, or continued trading markets for, any securities that we offer.

If dealers are used for the sale of securities, we, or an underwriter, will sell the securities to them as principals. The dealers may then resell those securities to the public at varying prices determined by the dealers at the time of resale. We will include in the applicable prospectus supplement the names of the dealers and the terms of the transaction.

We may also sell the securities through agents designated from time to time. In the applicable prospectus supplement, we will name any agent involved in the offer or sale of the offered securities, and we will describe any commissions payable to the agent. Unless we inform you otherwise in the applicable prospectus supplement, any agent will agree to use its reasonable best efforts to solicit purchases for the period of its appointment.

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We may sell the securities directly in transactions not involving underwriters, dealers or agents.

We may sell the securities directly to institutional investors or others who may be deemed to be underwriters within the meaning of the Securities Act with respect to any sale of those securities. We will describe the terms of any such sales in the prospectus supplement.

Underwriters, dealers and agents that participate in the distribution of the securities may be underwriters as defined in the applicable securities laws and any discounts or commissions they receive from us and any profit on their resale of the securities may be treated as underwriting discounts and commissions under the applicable securities laws. We will identify in the applicable prospectus supplement any underwriters, dealers or agents and will describe their compensation. We may have agreements with the underwriters, dealers and agents to indemnify them against specified civil liabilities, including liabilities under the applicable securities laws.

Underwriters, dealers and agents may engage in transactions with or perform services for us in the ordinary course of their businesses for which they may receive customary fees and reimbursement of expenses.

We may use underwriters with whom we have a material relationship. We will describe the nature of such relationship in the applicable prospectus supplement.

Under the securities laws of some states, the securities offered by this prospectus may be sold in those states only through registered or licensed brokers or dealers.

We may enter into hedging transactions with broker-dealers and the broker-dealers may engage in short sales of the securities in the course of hedging the positions they assume with us, including, without limitation, in connection with distributions of the securities by those broker-dealers. We may enter into option or other transactions with broker-dealers that involve the delivery of the securities offered hereby to the broker-dealers, who may then resell or otherwise transfer those securities. We may also loan or pledge the securities offered hereby to a broker-dealer and the broker-dealer may sell the securities offered hereby so loaned or upon a default may sell or otherwise transfer the pledged securities offered hereby.

LEGAL MATTERS

The validity of the securities being offered hereby will be passed upon for us by Sidley Austin LLP.

EXPERTS

The financial statements of Biodesix, Inc. as of December 31, 2020 and 2019, and for each of the years in the two-year period ended December 31, 2020, have been incorporated by reference herein and in the registration statement in reliance upon the report of KPMG LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3 under the Securities Act of 1933, as amended (the “Securities Act”), with respect to the securities offered by this prospectus and any applicable prospectus supplement. This prospectus and any applicable prospectus supplement do not contain all of the information set forth in the registration statement and its exhibits and schedules in accordance with SEC rules and regulations. For further information with respect to our company and the securities being offered by this prospectus and any applicable prospectus supplement, we refer you to the registration statement, including its exhibits and schedules. Statements contained in this prospectus and any applicable prospectus supplement, including documents that we have incorporated by reference, as to the contents of any contract or other document referred to are not necessarily complete, and, with respect to any contract or other document filed as an exhibit to the registration statement or any other such document, each such statement is qualified in all respects by reference to the corresponding exhibit. You should review the complete contract or other document to evaluate these statements. You may obtain copies of the registration statement and its exhibits via the SEC’s website at <http://www.sec.gov>.

We file annual, quarterly and current reports, proxy statements and other documents with the SEC under the U.S. Securities Exchange Act of 1934, as amended (the “Exchange Act”). The SEC maintains a website that contains reports, proxy and information statements and other information regarding issuers, including us, that file electronically with the SEC. You may obtain documents that we file with the SEC at <http://www.sec.gov>. We also make these documents available on our website at www.biodesix.com. Our website and the information contained or accessible through our website is not incorporated by reference in this prospectus or any prospectus supplement, and you should not consider it part of this prospectus or any prospectus supplement.

INFORMATION INCORPORATED BY REFERENCE

SEC rules permit us to incorporate information by reference in this prospectus and any applicable prospectus supplement. This means that we can disclose important information to you by referring you to another document filed separately with the SEC. The information incorporated by reference is considered to be part of this prospectus and any applicable prospectus supplement, except for information superseded by information contained in this prospectus or any applicable prospectus supplement itself or in any subsequently filed incorporated document. This prospectus and any applicable prospectus supplement incorporate by reference the documents set forth below that we have previously filed with the SEC (Commission File No. 001-39659), other than information in such documents that is deemed to be furnished and not filed. These documents contain important information about us and our business and financial condition.

- Annual Report on Form 10-K for the year ended [December 31, 2020](#), filed with the SEC on March 16, 2021;
- Quarterly Reports on Form 10-Q for the periods ended [March 31, 2021](#), [June 30, 2021](#) and [September 30, 2021](#), filed with the SEC on May 11, 2021, August 10, 2021 and November 15, 2021, respectively;
- Current Reports on Form 8-K, filed with the SEC on [January 5, 2021](#) (Item 5.02 only), [March 23, 2021](#) and [May 27, 2021](#);
- the information specifically incorporated by reference into our Annual Report on Form 10-K from our [Definitive Proxy Statement on Schedule 14A](#), filed with the SEC on April 29, 2021; and
- The description of our common stock contained in our Registration Statement on [Form 8-A](#), dated October 26, 2020.

All documents that we file (but not those that we furnish) pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act, after the date of the initial registration statement of which this prospectus is a part and prior to the

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effectiveness of the registration statement shall be deemed to be incorporated by reference into this prospectus and will automatically update and supersede the information in this prospectus, and any previously filed documents. All documents that we file (but not those that we furnish) pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act on or after the date of this prospectus and prior to the termination of the offering of any of the securities covered under this prospectus shall be deemed to be incorporated by reference into this prospectus and will automatically update and supersede the information in this prospectus, the applicable prospectus supplement and any previously filed documents.

Any statement contained herein or in a document incorporated or deemed to be incorporated by reference in this prospectus or any applicable prospectus supplement shall be deemed to be modified or superseded for purposes of this prospectus and such applicable prospectus supplement to the extent that a statement contained in this prospectus or such applicable prospectus supplement, or in any other subsequently filed document which also is or is deemed to be incorporated by reference in this prospectus and such applicable prospectus supplement, modifies or supersedes such earlier statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus or such applicable prospectus supplement.

You can obtain any of the filings incorporated by reference into this prospectus or any applicable prospectus supplement through us or from the SEC through the SEC's website at <http://www.sec.gov>. Upon request, we will provide, without charge, a copy of any or all of the reports and documents referred to above which have been incorporated by reference into this prospectus or any applicable prospectus supplement. Prospective investors may obtain documents incorporated by reference in this prospectus or any applicable prospectus supplement by requesting them in writing or by telephone from us at our executive offices at:

Biodesix, Inc.
2970 Wilderness Place, Suite 100
Boulder, Colorado 80301
(303) 417-0500

Our reports and documents incorporated by reference herein may also be found in the "Investor Relations" section of our website at www.biodesix.com. The content of our website and any information that is linked to or accessible from our website (other than our filings with the SEC that are incorporated by reference, as set forth under "Information Incorporated by Reference") is not incorporated by reference into this prospectus or any applicable prospectus supplement and you should not consider it a part of this prospectus, any applicable prospectus supplement, or the registration statement.



\$30,000,000

PROSPECTUS SUPPLEMENT

November , 2022
