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

**FORM S-3
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

BIODESIX, INC.
(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

20-3986492
(I.R.S. Employer
Identification Number)

Biodesix, Inc.
919 West Dillon Road
Louisville, Colorado 80027
(303) 417-0500
(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive Offices)

Scott Hutton
President and Chief Executive Officer
Biodesix, Inc.
919 West Dillon Road
Louisville, Colorado 80027
(303) 417-0500
(Name, Address, Including Zip Code, and Telephone Number, Including Area Code, of Agent for Service)

Copies to:

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Approximate date of commencement of proposed sale to the public: From time to time after this registration statement becomes effective.

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

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

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

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

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

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

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

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

Emerging growth company

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

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until this registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to such Section 8(a), may determine.

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

Subject to Completion, Dated November 1, 2024

PROSPECTUS



BIODESIX, INC.

62,202,399 Shares of Common Stock

Offered by the Selling Stockholders

This prospectus relates to the proposed resale or other disposition by the selling stockholders identified in this prospectus of up to an aggregate of 62,202,399 shares of our common stock, par value \$0.001 per share. We are not selling any common stock under this prospectus and will not receive any of the proceeds from the sale or other disposition of common stock by the selling stockholders.

The selling stockholders may sell the common stock on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale, on the over-the-counter market, in one or more transactions otherwise than on these exchanges or systems, such as privately negotiated transactions, or using a combination of these methods, and at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at negotiated prices. See the disclosure under the heading “Plan of Distribution” elsewhere in this prospectus for more information about how the selling stockholders may sell or otherwise dispose of their common stock hereunder.

The selling stockholders may sell any, all or none of the shares of common stock offered by this prospectus and we do not know when or in what amount the selling stockholders may sell their shares of common stock hereunder following the effective date of the registration statement of which this prospectus forms a part.

Our common stock is listed on the Nasdaq Global Market under the symbol “BDSX.” On October 31, 2024, the last reported sale price of our common stock was \$1.70.

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 _____, 2024

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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, the selling stockholders may, from time to time, sell up to 62,202,399 shares of our common stock in one or more offerings as described in this prospectus.

Each time we or the selling stockholders 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.”

We and the selling stockholders have not authorized anyone to provide you with different information or to make any representation other than those contained in this prospectus. 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. The selling stockholders are not making an offer to sell, or seeking offers to buy, the securities in any jurisdiction where the offer or sale is not permitted.

The selling stockholders may sell the common stock on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale, in the over-the-counter market, in one or more transactions otherwise than on these exchanges or systems, such as privately negotiated transactions, or using a combination of these methods, and at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at negotiated prices. See “Plan of Distribution”.

The selling stockholders may sell any, all or none of the securities offered by this prospectus and we do not know when or in what amount the selling stockholders may sell their common stock hereunder following the effective date of the registration statement of which this prospectus forms a part.

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. This prospectus contains trade names, trademarks and service marks of others, which are the property of their respective owners. Solely for convenience, trademarks and trade names referred to in this prospectus may appear without the ® or TM symbols.

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, 2023 and in our Quarterly Reports on Form 10-Q for the periods ended March 31, June 30 and September 30, 2024, and in subsequent filings, which are incorporated by reference into this prospectus. You should also read our audited consolidated financial statements and related notes included in our Annual Report on Form 10-K for the year ended December 31, 2023 and our unaudited consolidated financial statements and related notes included in our Quarterly Reports on Form 10-Q for the quarterly periods ended March 31, 2024, June 30, 2024 and September 30, 2024. Such annual and quarterly reports are incorporated by reference in 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:

- 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;
- product performance and reliability to maintain and grow our business;

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- third-party suppliers, including courier services, contract manufacturers and single source suppliers; making us vulnerable to supply problems and price fluctuations;
- the impact of a pandemic, epidemic, or outbreak of an infectious disease in the United States (U.S.) or worldwide, including the COVID-19 pandemic on our business;
- natural or man-made disasters and other similar events 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;
- 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;

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- 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”.

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.

Overview

Biodesix, Inc. (“Biodesix”, “we,” “us,” “our” or the “Company”) is a leading diagnostic solutions company with a focus in lung disease. By combining a multi-omic approach with a holistic view of the patient’s disease state, we believe our testing solutions provide physicians with greater insights to help personalize their patients’ care and meaningfully improve disease detection, evaluation, and treatment. Our unique approach to precision medicine provides timely and actionable clinical information, which we believe helps improve overall patient outcomes and lowers the overall healthcare cost by reducing the use of ineffective and unnecessary treatments and procedures. In addition to our 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 also recognize revenue from other services, including amounts derived from licensing our technologies.

Our core belief is that no single technology will answer all clinical questions that we encounter. Therefore, we employ multiple technologies, including genomics, transcriptomics, proteomics, radiomics, and artificial intelligence (“AI”) enabled informatics, to discover innovative diagnostic tests for potential clinical use. Our multi-omic approach is designed to enable us to discover diagnostic tests that answer critical clinical questions faced by physicians, researchers, and biopharmaceutical companies.

We have commercialized five diagnostic tests which are currently on market and we perform more than 30 assays for clinical and research use as part of our laboratory services that have been used by over 65 biopharmaceutical customers and academic partners.

Blood-Based Lung Tests

We have five diagnostic blood-based lung cancer tests across the lung cancer continuum of care.

Diagnosis

- Nodify CDT[®] and Nodify XL2[®] tests, together marketed as our Nodify Lung[®] Nodule Risk Assessment testing, assess a suspicious lung nodule’s risk of lung cancer to help identify the most appropriate treatment pathway. The Nodify CDT and XL2 tests have an established average turnaround time of one and five business days, respectively, from receipt of the blood sample, providing physicians with timely results to guide diagnostic planning. The Nodify CDT test is a blood-based test that detects the presence of seven autoantibodies associated with the presence of tumors. Elevated levels of the autoantibodies in patients with lung nodules indicate an increased risk of lung cancer to help identify patients that may benefit from timely intervention. The Nodify XL2 test is a blood-based proteomic test that evaluates the likelihood that a lung nodule is benign to help identify patients that may benefit from surveillance imaging. 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, GeneStratNGS[®] and VeriStrat[®] tests, marketed as part of our IQLung[™] testing strategy, are used following diagnosis of lung cancer to detect the presence of mutations in the tumor and the state of the patient’s immune system to help guide treatment decisions. The GeneStrat ddPCR tumor genomic profiling test and the VeriStrat immune profiling test have an established average turnaround time of two business days from receipt of the blood sample, and the GeneStrat NGS test has an established average turnaround time of three business days from receipt of the blood sample,

providing physicians with timely results to facilitate rapid treatment decisions. The GeneStrat ddPCR test evaluates the presence of actionable mutations in lung cancer. The test is covered independent of stage and can be used multiple times per patient to monitor changes in mutation status. The GeneStrat NGS test is a broad 52 gene panel, including guideline recommended mutations that help identify advanced stage patients eligible for targeted therapy or clinical trial enrollment. The VeriStrat test is a blood-based proteomic test that provides a personalized view of each patient's immune response to their lung cancer.

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 (the "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 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 \$1.24 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) until December 31, 2025 (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.

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Corporate Information

We were incorporated in Delaware in 2005 as Elston Technologies, Inc. Our principal executive offices are located at 919 West Dillon Rd., Louisville, Colorado 80027, and our telephone number is (303) 417-0500. On June 20, 2006, we changed our name to Bidesix, Inc.

Our website address is www.bidesix.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.bidesix.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 not receive any of the proceeds from the sale of our common stock by the selling stockholders. Any proceeds from the sale by the selling stockholders of the common stock offered by this prospectus will be received by the selling stockholders. See “Selling Stockholders.”

SELLING STOCKHOLDERS

This prospectus covers the resale or other disposition from time to time identified in the table below of up to an aggregate of 62,202,399 shares of our common stock. The selling stockholders may from time to time offer and sell any or all of the Registration Shares set forth below pursuant to this prospectus and any accompanying prospectus supplement.

The following table sets forth the number of shares of common stock beneficially owned by the selling stockholders, the number of shares of common stock that may be offered under this prospectus and the number of shares of common stock owned by the selling stockholders assuming all of the shares covered hereby are sold and assuming the conditions noted in the footnotes thereto. The number of shares beneficially owned by each selling stockholder is determined under rules issued by the SEC. Under these rules, beneficial ownership includes any shares over which a selling stockholder has sole or shared voting power or investment power. In computing the beneficial ownership and percentage ownership of each selling stockholder, we have deemed shares of common stock subject to options that are currently exercisable or exercisable within 60 days of October 25, 2024 and RSUs representing the right to receive shares of common stock that were deferred under the Director Deferred Compensation Plan or that vest within 60 days of October 25, 2024 to be outstanding and to be beneficially owned by the person holding the option or restricted stock unit, although these shares are not considered outstanding for purposes of computing the percentage ownership of any other selling stockholder. Percentage ownership is based on 145,467,295 shares of common stock outstanding as of October 25, 2024. The number of shares of common stock in the column “Number of Shares Being Offered Hereby (Maximum Number) That May Be Sold” represents all of the shares of common stock that the selling stockholders may offer hereunder. The selling stockholders may sell some, all or none of the shares of common stock that may be offered hereunder. We do not know when the shares of common stock will be sold by the selling stockholders, and the selling stockholders may offer the shares of common stock from time to time.

Lawrence T. Kennedy, Jr. is the Managing Partner and Chief Executive Officer of Westwood Management and has served on our Board of Directors since January 2023. Jack Schuler is a co-founder of Crabtree Partners and has served on our Board of Directors since June 2008. Dr. Matthew Strobeck is Managing Partner of Birchview Capital LP and has served on our Board of Directors since January 2012. John Patience is a co-founder of Crabtree Partners and has served on our Board of Directors since June 2008.

The information set forth below is based upon information obtained from the selling stockholders and upon information known to us at October 25, 2024. Unless otherwise indicated, the address for each beneficial owner listed in the table below is c/o Biodesix, Inc., 919 West Dillon Rd., Louisville, Colorado 80027.

| Name and Address of Selling Stockholder | Beneficial Ownership Prior to this Offering | | Number of Shares Being Offered Hereby (Maximum Number) That May Be Sold | Beneficial Ownership After the Sale of the Maximum Number of Shares | |
|--|--|----------------|--|--|----------------|
| | Number | Percent | | Number | Percent |
| Entities affiliated with Lawrence T. Kennedy, Jr. ⁽¹⁾ | 25,657,040 | 17.6% | 19,603,596 | 6,053,444 | 4.2% |
| Entities affiliated with Jack Schuler ⁽²⁾ | 31,181,581 | 21.4% | 30,707,722 | 473,859 | * |
| Entities affiliated with Matthew Strobeck ⁽³⁾ | 6,080,357 | 4.2% | 4,809,658 | 1,270,699 | * |
| Entities affiliated with John Patience ⁽⁴⁾ | 7,685,722 | 5.3% | 7,081,423 | 604,299 | * |

* Represents beneficial ownership of less than 1%.

(1) Consists of (a) 24,700 shares of common stock issuable upon the exercise of options held by Mr. Kennedy that are vested and exercisable within 60 days of October 25, 2024, (b) RSUs held by Mr. Kennedy representing the right to receive 284,257 shares of common stock that will vest within 60 days of October 25, 2024 and be deferred under the Director Deferred Compensation Plan until separation from

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service to the Company, and (c) 9,582,783 shares of common stock held by Lawrence T. Kennedy, Jr. Revocable Trust UAD 6/19/01 and as amended from time to time, (d) 12,267,873 shares of common stock held by Lawrence T. Kennedy, Jr. Perpetuity Trust UAD 6/30/16, (e) 2,775,386 shares of common stock held by KFDI-B LLC, (f) 722,041 shares of common stock held by Lair BDSX GRAT 2022-03-02.

- (2) Consists of (a) 70,802 shares of common stock issuable upon the exercise of options held by Jack Schuler that are vested and exercisable within 60 days of October 25, 2024, (b) RSUs held by Mr. Schuler representing the right to receive 316,097 shares of common stock that vest within 60 days of October 25, 2024 and be deferred under the Director Deferred Compensation Plan until separation from service to the Company, and (c) 30,794,682 shares of common stock held by Jack W. Schuler Living Trust.
- (3) Consists of (a) 36,417 shares of common stock issuable upon the exercise of options held by Dr. Matthew Strobeck that are vested and exercisable within 60 days of October 25, 2024, (b) RSUs held by Dr. Matthew representing the right to receive 327,783 shares of common stock that vest within 60 days of October 25, 2024 and be deferred under the Director Deferred Compensation Plan until separation from service to the Company, and (c) 2,542,928 shares of common stock held by Dr. Strobeck, (d) 2,570,879 shares of common stock held by Birchview Fund LLC, (e) 85,673 shares of common stock held by Birchview Capital Separately Managed Account, (f) 40,665 shares of common stock held by Clajer Capital LLC and (g) 119,003 shares of common stock held in each of four UTMA accounts for the benefit of the minor children of Dr. Strobeck (for an aggregate amount of 476,012 shares).
- (4) Consists of (a) 70,802 shares of common stock issuable upon the exercise of options held by Mr. Patience that are vested and exercisable within 60 days of October 25, 2024, (b) RSUs held by Mr. Patience representing the right to receive 316,097 shares of common stock that vest within 60 days of October 25, 2024 and be deferred under the Director Deferred Compensation Plan until separation from service to the Company, and (c) 2,078,298 shares of common stock held by Patience Enterprises LP, (d) 4,829,611 shares of common stock held by John Patience Living Trust, dated July 23, 1993, and (e) 52,988 shares of common stock held by Diane Patience, and (f) 337,926 shares of common stock held directly by John Patience. Does not include 246,913 shares held by Ventana Charitable Foundation.

PLAN OF DISTRIBUTION

We are registering the shares of common stock issued to the selling stockholders to permit the sale, transfer or other disposition of these shares by the selling stockholders or their donees, pledgees, transferees or other successors-in-interest from time to time after the date of this prospectus. We will not receive any of the proceeds from the sale by the selling stockholders of their shares of common stock. We will, or will procure to, bear all fees and expenses incident to our obligation to register the shares of common stock. In the event that a selling stockholder elects to sell its shares of common stock through an underwritten offering on a firm commitment or best efforts basis, we will amend the registration statement to which this prospectus relates to disclose all relevant and material information regarding such offering and sale.

The selling stockholders may sell all or a portion of the shares of common stock beneficially owned by them and offered hereby from time to time. If the shares of common stock are sold through underwriters or broker-dealers, the selling stockholders will be responsible for underwriting discounts (it being understood that the selling stockholders shall not be deemed to be underwriters solely as a result of their participation in this offering) or commissions or agent's commissions. The shares of common stock may be sold on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale, in the over-the-counter market or in transactions otherwise than on these exchanges or systems or in the over-the-counter market and in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at negotiated prices. These sales may be effected in transactions, which may involve crosses or block transactions. The selling stockholders may use any one or more of the following methods when selling their shares of common stock:

- ordinary brokerage transactions and transactions in which a broker-dealer solicits purchasers;
- block trades in which a broker-dealer will attempt to sell the shares as agent, but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- "at the market" or through market makers or into an existing market for the shares;
- short sales entered into after the effective date of the registration statement of which this prospectus is a part;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise, after the effective date of the registration statement of which this prospectus is a part;
- through the distribution of the shares by any selling stockholders to its partners, members or stockholders;
- through broker-dealers that agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- through one or more underwritten offerings on a firm commitment or best efforts basis;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

The selling stockholders also may resell all or a portion of the shares of common stock in open market transactions in reliance upon Rule 144, as permitted by that rule, or Section 4(a)(1) under the Securities Act, if available, rather than under this prospectus, provided that they meet the criteria and conform to the requirements of those provisions.

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Broker-dealers engaged by the selling stockholders may arrange for other broker-dealers to participate in sales. If the selling stockholders effect such transactions by selling their shares of common stock to or through underwriters, broker-dealers or agents, such underwriters, broker-dealers or agents may receive commissions in the form of discounts, concessions or commissions from the selling stockholders or commissions from purchasers of the shares of common stock for whom they may act as agent or to whom they may sell as principal. Such commissions will be in amounts to be negotiated, but, except as set forth in a supplement to this prospectus, in the case of an agency transaction will not be in excess of a customary brokerage commission in compliance with FINRA Rule 2121; and in the case of a principal transaction a markup or markdown in compliance with FINRA IM-2121.01.

In connection with sales of the shares of common stock or otherwise, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the shares of common stock in the course of hedging in positions they assume. The selling stockholders may also sell their shares of common stock short and if such short sale takes place after the date that this registration statement is declared effective by the SEC, the selling stockholders may deliver their shares of common stock covered by this prospectus to close out short positions and to return borrowed shares of common stock in connection with such short sales. The selling stockholders may also loan or pledge their shares of common stock to broker-dealers that in turn may sell such shares, to the extent permitted by applicable law. The selling stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction). Notwithstanding the foregoing, the selling stockholders have been advised that they may not use their shares of common stock the resale of which has been registered on this registration statement to cover short sales of our common stock made prior to the date the registration statement, of which this prospectus forms a part, has been declared effective by the SEC.

The selling stockholders may, from time to time, pledge or grant a security interest in some or all of the shares of common stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of common stock from time to time pursuant to this prospectus or any amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act, amending, if necessary, the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus. The selling stockholders also may transfer and donate the shares of common stock in other circumstances in which case the transferees, donees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

The selling stockholders and any broker-dealer or agents participating in the distribution of the shares of common stock may be deemed to be “underwriters” within the meaning of Section 2(11) of the Securities Act in connection with such sales. In such event, any commissions paid, or any discounts or concessions allowed to, any such broker-dealer or agent and any profit on the resale of the shares purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. Selling stockholders who are “underwriters” within the meaning of Section 2(11) of the Securities Act will be subject to the applicable prospectus delivery requirements of the Securities Act including Rule 172 thereunder and may be subject to certain statutory liabilities of, including but not limited to, Sections 11, 12 and 17 of the Securities Act and Rule 10b-5 under the Exchange Act.

Each selling stockholder has informed the Company that it is not a registered broker-dealer and does not have any written or oral agreement or understanding, directly or indirectly, with any person to distribute the shares of common stock. Upon the Company being notified in writing by a selling stockholder that any material arrangement has been entered into with a broker-dealer for the sale of common stock through a block trade, special offering, exchange distribution or secondary distribution or a purchase by a broker or dealer, a supplement to this prospectus will be filed, if required, pursuant to Rule 424(b) under the Securities Act,

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disclosing (i) the name of each such selling stockholder and of the participating broker-dealer(s), (ii) the number of shares of common stock involved, (iii) the price at which such shares of common stock were sold, (iv) the commissions paid or discounts or concessions allowed to such broker-dealer(s), where applicable, (v) that such broker-dealer(s) did not conduct any investigation to verify the information set out in this prospectus, and (vi) other facts material to the transaction.

Under the securities laws of some U.S. states, the shares of common stock may be sold in such states only through registered or licensed brokers or dealers. In addition, in some U.S. states the shares of common stock may not be sold unless such shares have been registered or qualified for sale in such state or an exemption from registration or qualification is available and is complied with.

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

Each selling stockholder and any other person participating in such distribution will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including, without limitation, to the extent applicable, Regulation M of the Exchange Act, which may limit the timing of purchases and sales of any of the shares of common stock by the selling stockholder and any other participating person. To the extent applicable, Regulation M may also restrict the ability of any person engaged in the distribution of the shares of common stock to engage in market-making activities with respect to the shares of common stock. All of the foregoing may affect the marketability of the shares of common stock and the ability of any person or entity to engage in market-making activities with respect to the shares of common stock.

We will pay all expenses of the registration of the shares of common stock, including, without limitation, SEC filing fees and expenses of compliance with state securities or "blue sky" laws; provided, however, that each selling stockholder will pay all underwriting discounts and selling commissions, if any and any related legal expenses incurred by it.

LEGAL MATTERS

The validity of the securities being offered hereby will be passed upon for us by Sidley Austin LLP, San Francisco, California. Partners of Sidley Austin LLP own less than 1% of our outstanding common stock. Additional legal matters may be passed upon for us or any underwriters, dealers or agents, by counsel that we will name in the applicable prospectus supplement.

EXPERTS

The financial statements of Biodesix, Inc. as of December 31, 2023 and 2022, and for the years then ended, have been incorporated by reference herein in reliance upon the report of KPMG LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We 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, 2023, filed with the SEC on March 1, 2024;
- Quarterly Reports on Form 10-Q for the periods ended March 31, 2024, June 30, 2024 and September 30, 2024, filed with the SEC on [May 8, 2024](#), [August 7, 2024](#) and [November 1, 2024](#), respectively;
- Current Reports on Form 8-K, filed with the SEC on [April 9, 2024](#) and [May 23, 2024](#);
- 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 26, 2024; 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 effectiveness of the registration statement shall be deemed to be incorporated by reference into this prospectus

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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.
919 West Dillon Road
Louisville, Colorado 80027
(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.



62,202,399 Shares of Common Stock

Offered by the Selling Stockholders

, 2024

PROSPECTUS

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution

Set forth below is an estimate (except in the case of the registration fee) of the amount of fees and expenses to be incurred in connection with the issuance and distribution of the offered securities, other than underwriting discounts and commissions. All amounts are estimates except the SEC registration fee.

| | |
|-----------------------------------|-----------|
| SEC registration fee | \$ 15,427 |
| Legal fees and expenses | * |
| Accounting fees and expenses | * |
| Printing expenses | * |
| Transfer agent and registrar fees | * |
| Miscellaneous | * |
| Total | \$ * |

* Estimated expenses not presently known.

Item 15. Indemnification of Directors and Officers

No director of the Company shall be personally liable to the Company or its stockholders for monetary damages for breach of fiduciary duty as a director, except to the extent such exemption from liability or limitation thereof is not permitted under the DGCL, as it presently exists or may hereafter be amended from time to time. If the DGCL is amended to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of the Company shall be eliminated or limited to the fullest extent permitted by the DGCL, as so amended.

The Company shall indemnify its directors and officers to the fullest extent authorized or permitted by the DGCL, as now or hereafter in effect, and such right to indemnification shall continue as to a person who has ceased to be a director or officer of the Company and shall inure to the benefit of such person's heirs, executors and personal and legal representatives. A director's or officer's right to indemnification shall include the right to be paid by the Company the expenses incurred in defending or otherwise participating in any proceeding in advance of its final disposition, provided that such director or officer presents to the Company a written undertaking to repay such amount if it shall ultimately be determined that such director or officer is not entitled to be indemnified by the Company. Notwithstanding the foregoing, except for proceedings to enforce any director's or officer's rights to indemnification or rights to advancement of expenses, the Company shall not be obligated to indemnify any director or officer, or advance expenses of any director or officer, (or such director's or officer's heirs, executors or personal or legal representatives) in connection with any proceeding (or part thereof) initiated by such person unless such proceeding (or part thereof) was authorized by the Board.

The rights to indemnification and advancement of expenses shall neither be exclusive of, nor be deemed in limitation of, any rights to which any person may otherwise be or become entitled or permitted under the Certificate of Incorporation, the Bylaws, any statute, agreement, vote of stockholders or disinterested directors or otherwise.

To the fullest extent authorized or permitted by the DGCL, the Company may purchase and maintain insurance on behalf of any current or former director or officer of the Company against any liability asserted against such person, whether or not the Company would have the power to indemnify such person against such liability.

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Item 16. Exhibits

| Exhibit Number | Description of Document |
|-----------------------|--|
| 3.1* | Amended and Restated Certificate of Incorporation of the Registrant (previously filed with the Company's Annual Report on Form 10-K dated December 31, 2020). |
| 3.2* | Amended and Restated Bylaws of the Registrant (previously filed with the Company's Annual Report on Form 10-K dated December 31, 2020). |
| 4.1* | Specimen stock certificate evidencing shares of Common Stock (previously filed with the Company's Registration Statement on Form S-1/A, with the SEC on October 21, 2020). |
| 4.2* | Eleventh Amended and Restated Investor Rights Agreement, (previously filed in the Company's Registration Statement on Form S-1, with the SEC on October 2, 2020). |
| 4.3* | Warrant to Purchase Stock, dated November 21, 2022, issued by the Company to Perceptive Credit Holdings IV, LP. (previously filed in the Company's Current Report on Form 8-K, with the SEC on November 21, 2022). |
| 5.1 | Opinion of Sidley Austin LLP. |
| 23.1 | Consent of Sidley Austin LLP (included in Exhibit 5.1). |
| 23.2 | Consent of KPMG LLP. |
| 24.1 | Power of Attorney (included on signature page to this Registration Statement on Form S-3). |
| 107 | Filing Fee Table. |

* Previously filed.

Item 17. Undertakings

(a) The undersigned registrant hereby undertakes:

- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
 - (i) To include any prospectus required by section 10(a)(3) of the Securities Act;
 - (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in this registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and
 - (iii) To include any material information with respect to the plan of distribution not previously disclosed in this registration statement or any material change to such information in this registration statement;

provided, however, that subparagraphs (i), (ii) and (iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference

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in this registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

- (2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
- (4) That, for the purpose of determining liability under the Securities Act to any purchaser:
 - (i) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
 - (ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii) or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.
- (5) That, for the purpose of determining liability of the registrant under the Securities Act to any purchaser in the initial distribution of the securities:

The undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

- (i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
 - (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
 - (iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or their securities provided by or on behalf of the undersigned registrant; and
 - (iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.
- (b) The undersigned registrant hereby further undertakes that, for the purposes of determining any liability under the Securities Act, each filing of the annual reports of the registrant pursuant to Section 13(a) or

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Section 15(d) of the Exchange Act that are incorporated by reference in this registration statement, if any, shall be deemed to be a new registration statement relating to the securities offered herein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

- (c) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the provisions described under Item 15 of this registration statement, or otherwise, the registrant has been advised that in the opinion of the Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in such the Securities Act and will be governed by the final adjudication of such issue.
- (d) The undersigned registrant hereby undertakes that:
 - (1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective; and
 - (2) For purposes of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Louisville, State of Colorado on this 1st day of November, 2024.

BIODESIX, INC.

By: /s/ Scott Hutton

Scott Hutton
President, Chief Executive Officer and Director
(Principal Executive Officer)

/s/ Robin Harper Cowie

Robin Harper Cowie
Chief Financial Officer, Secretary and Treasurer
(Principal Financial Officer)

POWER OF ATTORNEY AND SIGNATURES

We, the undersigned directors and officers of Biodesix, Inc. (the Company), hereby severally constitute and appoint Scott Hutton and Robin Harper Cowie, and each of them singly, our true and lawful attorneys, with full power to them, and to each of them singly, to sign for us and in our names in the capacities indicated below, the registration statement on Form S-3 filed herewith, and any and all pre-effective and post-effective amendments to said registration statement, and any registration statement filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended, in connection with the registration under the Securities Act of 1933, as amended, of equity securities of the Company, and to file or cause to be filed the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as each of them might or could do in person, and hereby ratifying and confirming all that said attorneys, and each of them, or their substitute or substitutes, shall do or cause to be done by virtue of this Power of Attorney. This Power of Attorney does not revoke any power of attorney previously granted by the undersigned, or any of them.

Pursuant to the requirements of the Securities Act of 1933, as amended, this registration statement has been signed by the following persons in the capacities indicated on the date indicated:

| <u>SIGNATURE</u> | <u>TITLE</u> | <u>DATE</u> |
|---|---|------------------|
| <u>/s/ Scott Hutton</u> Scott Hutton | President and Chief Executive Officer and Director (Principal Executive Officer) | November 1, 2024 |
| <u>/s/ Robin Harper Cowie</u> Robin Harper Cowie | Chief Financial Officer and Treasurer (Principal Financial Officer) | November 1, 2024 |
| <u>/s/ Christopher Vazquez</u> Christopher Vazquez | Chief Accounting Officer (Principal Accounting Officer) | November 1, 2024 |
| <u>/s/ John Patience</u> John Patience | Director | November 1, 2024 |

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| | | |
|---|----------|------------------|
| <u>/s/ Jean Franchi</u> Jean Franchi | Director | November 1, 2024 |
| <u>/s/ Lawrence T. Kennedy, Jr.</u> Lawrence T. Kennedy, Jr. | Director | November 1, 2024 |
| <u>/s/ Jon Faiz Kayyem, Ph.D.</u> Jon Faiz Kayyem, Ph.D. | Director | November 1, 2024 |
| <u>/s/ Hany Massarany</u> Hany Massarany | Director | November 1, 2024 |
| <u>/s/ Jack Schuler</u> Jack Schuler | Director | November 1, 2024 |
| <u>/s/ Matthew Strobeck, Ph.D.</u> Matthew Strobeck, Ph.D. | Director | November 1, 2024 |
| <u>/s/ Charles Watts, M.D.</u> Charles Watts, M.D. | Director | November 1, 2024 |

SIDLEY

SIDLEY AUSTIN LLP
555 CALIFORNIA STREET
SUITE 2000
SAN FRANCISCO, CA 94104
+1 415 772 1200
+1 415 772 7400 FAX

AMERICA • ASIA PACIFIC • EUROPE

November 1, 2024

Biodesix, Inc.
919 West Dillon Rd.
Louisville, Colorado 80027

Re: Registration Statement on Form S-3

Ladies and Gentlemen:

We refer to the Registration Statement on Form S-3 (the "Registration Statement"), being filed by Biodesix, Inc., a Delaware corporation (the "Company"), with the Securities and Exchange Commission under the Securities Act of 1933, as amended (the "Securities Act"). The Registration Statement relates to the registration under the Securities Act of 62,202,399 shares (the "Shares") of the Company's common stock, par value \$0.001 per share. The Shares may be offered and sold by the selling stockholders referenced in the prospectus, as amended or supplemented from time to time, which forms a part of the Registration Statement.

This opinion letter is being delivered in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act.

We have examined the Registration Statement, the Company's amended and restated certificate of incorporation, the Company's amended and restated bylaws and the resolutions adopted by the board of directors of the Company relating to the Registration Statement and the issuance by the Company of the Shares. We have also examined originals, or copies of originals certified to our satisfaction, of such agreements, documents, certificates and statements of the Company and other corporate documents and instruments, and have examined such questions of law, as we have considered relevant and necessary as a basis for this opinion letter. We have assumed the authenticity of all documents submitted to us as originals, the genuineness of all signatures, the legal capacity of all persons and the conformity with the original documents of any copies thereof submitted to us for examination. As to facts relevant to the opinions expressed herein, we have relied without independent investigation or verification upon, and assumed the accuracy and completeness of, certificates, letters and oral and written statements and representations of public officials and officers and other representatives of the Company.

Based on and subject to the foregoing and the other limitations, qualifications and assumptions set forth herein, we are of the opinion that the Shares are validly issued, fully paid and non-assessable.

This opinion letter is limited to the General Corporation Law of the State of Delaware. We express no opinion as to the laws, rules or regulations of any other jurisdiction, including, without limitation, the federal laws of the United States of America or any state securities or blue sky laws.

We hereby consent to the filing of this opinion letter as an Exhibit to the Registration Statement and to all references to our Firm included in or made a part of the Registration Statement. In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act.

Very truly yours,

/s/ Sidley Austin LLP



KPMG LLP
Suite 800
1225 17th Street
Denver, CO 80202-5598

Consent of Independent Registered Public Accounting Firm

We consent to the use of our report dated March 1, 2024, with respect to the financial statements of Biodesix, Inc., incorporated herein by reference, and to the reference to our firm under the heading "Experts" in the prospectus.

/s/ KPMG LLP

Denver, Colorado
November 1, 2024

KPMG LLP, a Delaware limited liability partnership and a member firm of the KPMG global organization of independent member firms affiliated with KPMG International Limited, a private English company limited by guarantee.

Calculation of Filing Fee Tables

FORM S-3
(Form Type)

Biodesix, Inc.

(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered and Carry Forward Securities

| | Security Type | Security Class Title | Fee Calculation or Carry Forward Rule | Amount Registered ⁽¹⁾ | Proposed Maximum Offering Price Per Unit ⁽²⁾ | Maximum Aggregate Offering Price ⁽²⁾ | Fee Rate | Amount of Registration Fee | Carry Forward Form Type | Carry Forward File Number | Carry Forward Initial effective date | Filing Fee Previously Paid In Connection with Unsold Securities to be Carried |
|-----------------------------|----------------------------|---|---------------------------------------|----------------------------------|---|---|------------|----------------------------|-------------------------|---------------------------|--------------------------------------|---|
| Newly Registered Securities | | | | | | | | | | | | |
| Fees to Be Paid | Equity | Common stock, par value \$0.001 per share | Rule 457(c) | 62,202,399 | \$1.62 | \$100,767,886.38 | 0.00015310 | \$15,427.53 | — | — | — | — |
| Fees Previously Paid | — | — | — | — | — | — | — | — | — | — | — | — |
| Carry Forward Securities | | | | | | | | | | | | |
| Carry Forward Securities | — | — | — | — | — | — | — | — | — | — | — | — |
| | Total Offering Amounts | | | | | | | 15,427.53 | | | | |
| | Total Fees Previously Paid | | | | | | | — | | | | |
| | Total Fee Offsets | | | | | | | — | | | | |
| | Net Fee Due | | | | | | | 15,427.53 | | | | |

- (1) The selling shareholders of Biodesix, Inc. (the "Registrant") are registering 62,202,399 shares of common stock, par value \$0.001 per share (the "Common Stock"), that may be issued pursuant to the prospectus to which this exhibit is attached. Pursuant to Rule 416 under the Securities Act of 1933, as amended, this registration statement also covers such an indeterminate amount of shares of common stock as may become issuable to prevent dilution resulting from stock splits, stock dividends and similar events.
- (2) Estimated solely for the purpose of calculating the registration fee, based on the average of the high and low prices of the shares of Common Stock on The NASDAQ Global Market on October 28, 2024 (such date being within five business days of the date that this registration statement was first filed with the Securities and Exchange Commission, in accordance with Rule 457(c) under the Securities Act).