

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

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

BONE BIOLOGICS CORPORATION
(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of
incorporation or organization)

42-1743430

(I.R.S. Employer
Identification Number)

2 Burlington Woods Drive, Suite 100
Burlington, MA 01803
(781) 552-4452

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

Jeffrey Frelick
Chief Executive Officer
Bone Biologics Corporation
2 Burlington Woods Drive, Suite 100
Burlington, MA 01803
(781) 552-4452

(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 the effective date of this registration statement.

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	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input checked="" type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

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 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 or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

The information in this preliminary prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell nor does it seek an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, dated January 5, 2024

PROSPECTUS



BONE BIOLOGICS CORPORATION

142,384 Shares of Common Stock Offered by the Selling Stockholders

This prospectus relates to the public offering of up to 142,384 shares of common stock, par value \$0.001 per share (“common stock”), of Bone Biologics Corporation by the selling stockholders. These shares are issuable upon exercise of outstanding warrants exercisable for one share of common stock at an exercise price of \$4.16 per share and expiring on May 21, 2029 (the “warrants”).

The selling stockholders may sell common stock from time to time in the principal market on which the stock is traded at the prevailing market price or in negotiated transactions.

We will not receive any of the proceeds from the sale of common stock by the selling stockholders. We will pay the expenses of registering these shares.

Our common stock is listed on The Nasdaq Capital Market (“Nasdaq”) under the symbol “BBLG.” The closing price of our common stock on Nasdaq on January 3, 2024 was \$5.78 per share.

On December 20, 2023, we effected a reverse stock split of our common stock at a ratio of 1-for-8. Unless otherwise noted, the share and per share information in this prospectus reflects the effect of the reverse stock split. Documents incorporated by reference into this prospectus that were filed prior to December 20, 2023 do not give effect to the reverse stock split.

Investing in our securities involves a high degree of risk. See the section entitled “Risk Factors” beginning on page 7 of this prospectus and in the documents incorporated by reference into this prospectus for a discussion of risks that should be considered in connection with an investment in our securities.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is [], 2024.

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ABOUT THIS PROSPECTUS

We incorporate by reference important information into this prospectus. You may obtain the information incorporated by reference without charge by following the instructions under “Where You Can Find More Information.” You should carefully read this prospectus as well as additional information described under “Information Incorporated by Reference,” before deciding to invest in our securities.

We have not authorized anyone to provide you with additional information or information different from that contained or incorporated by reference in this prospectus filed with the Securities and Exchange Commission (the “SEC”). 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 offering to sell, and seeking offers to buy, our securities only in jurisdictions where offers and sales are permitted. The information contained in this prospectus, or any document incorporated by reference in this prospectus, is accurate only as of the date of those respective documents, regardless of the time of delivery of this prospectus or any sale of our securities. Our business, financial condition, results of operations and prospects may have changed since that date.

This prospectus contains estimates and other statistical data made by independent parties and by us relating to market size and growth and other data about our industry. We obtained the industry and market data in this prospectus from our own research as well as from industry and general publications, surveys and studies conducted by third parties. This data involves a number of assumptions and limitations and contains projections and estimates of the future performance of the industries in which we operate that are subject to a high degree of uncertainty, including those discussed in “Risk Factors.” We caution you not to give undue weight to such projections, assumptions and estimates. Further, industry and general publications, studies and surveys generally state that they have been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. While we believe that these publications, studies and surveys are reliable, we have not independently verified the data contained in them. In addition, while we believe that the results and estimates from our internal research are reliable, such results and estimates have not been verified by any independent source.

We have not done anything that would permit this offering or the possession or distribution of this prospectus in any jurisdiction where action for those purposes is required, other than in the United States. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the securities and the distribution of this prospectus outside of the United States.

CAUTIONARY NOTE CONCERNING FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference herein contain forward-looking statements that involve risks and uncertainties. You should not place undue reliance on these forward-looking statements. All statements other than statements of historical fact contained in this prospectus and the documents incorporated by reference herein contain are forward-looking statements. The forward-looking statements in this prospectus and the documents incorporated by reference herein are only predictions. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our business, financial condition and results of operations. In some cases, you can identify these forward-looking statements by terms such as “anticipate,” “believe,” “continue,” “could,” “depend,” “estimate,” “expect,” “intend,” “may,” “ongoing,” “plan,” “potential,” “predict,” “project,” “should,” “will,” “would” or the negative of those terms or other similar expressions, although not all forward-looking statements contain those words. We have based these forward-looking statements on our current expectations and projections about future events and trends that we believe may affect our financial condition, results of operations, strategy, short- and long-term business operations and objectives, and financial needs. These forward-looking statements include, but are not limited to, statements concerning the following:

- our ability to regain and maintain compliance with the Nasdaq listing standards and remain listed on Nasdaq;
- our projected financial position and estimated cash burn rate;
- our estimates regarding expenses, future revenues and capital requirements;
- our ability to continue as a going concern;
- our need to raise substantial additional capital to fund our operations;
- the success, cost and timing of our clinical trials;
- our dependence on third parties in the conduct of our clinical trials;
- our ability to obtain the necessary regulatory approvals to market and commercialize our product candidates;
- the ultimate impact of health pandemics or epidemics on our business, our clinical trials, our research programs, healthcare systems or the global economy as a whole;
- the potential that results of preclinical and clinical trials indicate our current product candidate or any future product candidates we may seek to develop are unsafe or ineffective;
- the results of market research conducted by us or others;
- our ability to obtain and maintain intellectual property protection for our current product candidates;
- our ability to protect our intellectual property rights and the potential for us to incur substantial costs from lawsuits to enforce or protect our intellectual property rights;
- the possibility that a third party may claim we or our third-party licensors have infringed, misappropriated or otherwise violated their intellectual property rights and that we may incur substantial costs and be required to devote substantial time defending against claims against us;
- our reliance on third-party suppliers and manufacturers;
- the success of competing therapies and products that are or become available;
- our ability to expand our organization to accommodate potential growth and our ability to retain and attract key personnel;
- the potential for us to incur substantial costs resulting from product liability lawsuits against us and the potential for these product liability lawsuits to cause us to limit our commercialization of our product candidate;
- market acceptance of our product candidate, the size and growth of the potential markets for our current product candidate and any future product candidates we may seek to develop, and our ability to serve those markets;
- the successful development of our commercialization capabilities, including sales and marketing capabilities;
- our expectation regarding the number of shares outstanding after this offering;
- our intention to use the net proceeds of this offering to fund clinical trials, maintain and extend our patent portfolio, and for working capital and other general corporate purposes; and
- pending the intended uses described herein, our intention to invest the net proceeds of this offering in short-term, investment grade, interest-bearing securities.

These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including the successful development and commercialization of our product candidates, market acceptance of our product candidates, our financial performance, including our ability to fund operations, our ability to regain and maintain compliance with Nasdaq’s continued listing requirements, regulatory approval and regulation of our product candidates, our expected use of proceeds from this offering, and other factors and risks identified from time to time in our filings with the SEC, including this prospectus and those described in “Risk Factors.” Moreover, we operate in a very competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for our management to predict all risks, 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 any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this prospectus may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements.

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 that the future results, levels of activity, performance or events and circumstances reflected in the forward-looking statements will be achieved or occur. Moreover, except as required by law, neither we nor any other person assumes responsibility for the accuracy and completeness of the forward-looking statements. We undertake no obligation to update publicly any forward-looking statements for any reason after the date of this prospectus to conform these statements to actual results or to changes in our expectations.

You should read this prospectus and the documents that we reference in this prospectus and have filed with the SEC as exhibits to the registration statement of which this prospectus is a part with the understanding that our actual future results, levels of activity, performance and events and circumstances may be materially different from what we expect.

PROSPECTUS SUMMARY

The following summary highlights selected information contained or incorporated by reference in this prospectus and does not contain all of the information that may be important to you and your investment decision. Before investing in our securities, you should carefully read this entire prospectus, including our consolidated financial statements and the related notes and other documents incorporated by reference herein, as well as the information under the caption “Risk Factors” herein and under similar headings in the other documents that are incorporated by reference into this prospectus including documents that are filed after the date hereof. Some of the statements in this prospectus constitute forward-looking statements that involve risks and uncertainties. See “Cautionary Note Regarding Forward-Looking Statements.” In this prospectus, unless context requires otherwise, references to “we,” “us,” “our,” “BBLG” “Bone Biologics,” or the “Company” refer to Bone Biologics Corporation and its subsidiary on a consolidated basis.

Company Overview

We are a medical device company that is currently focused on bone regeneration in spinal fusion using the recombinant human protein known as NELL-1. NELL-1 in combination with DBM, demineralized bone matrix, is an osteopromotive recombinant protein that provides target specific control over bone regeneration. The NELL-1 technology platform has been licensed exclusively for worldwide applications to us through a technology transfer from the UCLA Technology Development Group on behalf of UC Regents (“UCLA TDG”). UCLA TDG and the Company received guidance from the Food and Drug Administration (“FDA”) that NELL-1/DBM will be classified as a device/drug combination product with a pre-market approval filing (“PMA”).

We were founded by University of California professors in collaboration with an Osaka University professor and a University of Southern California surgeon in 2004 as a privately-held company with proprietary, patented technology that has been validated in sheep and non-human primate models to facilitate bone growth. We believe our platform technology has application in delivering improved outcomes in the surgical specialties of spinal, orthopedic, general orthopedic, plastic reconstruction, neurosurgery, interventional radiology, and sports medicine. Lead product development and clinical studies are targeted on spinal fusion surgery, one of the larger segments in the orthopedic market.

We are a development stage entity. The production and marketing of our products and ongoing research and development activities are subject to extensive regulation by numerous governmental authorities in the United States. Prior to marketing in the United States, any combination product developed by us must undergo rigorous preclinical (animal) and clinical (human) testing and an extensive regulatory approval process implemented by the FDA under the Food, Drug and Cosmetic Act. There can be no assurance that we will not encounter problems in clinical trials that will cause us or the FDA to delay or suspend the clinical trials.

The platform technology is our recombinant human protein, known as NELL-1, a proprietary skeletal specific growth factor which is a bone void filler. NELL-1 provides regulation over skeletal tissue formation and stem cell differentiation during bone regeneration. We obtained the platform technology pursuant to an exclusive license agreement with UCLA TDG which grants us exclusive rights to develop and commercialize NELL-1 for spinal fusion by local administration, osteoporosis and trauma applications. A major challenge associated with orthopedic surgery is effective bone regeneration, including challenges related to rapid, uncontrolled bone growth which can cause unsound structure; cysts and less dense bone formation; unwanted bone formation, and swelling; and intense inflammatory response to current bone regeneration compounds. We believe NELL-1 will address these unmet clinical challenges for effective bone regeneration, especially in hard healers.

We are currently focused on bone regeneration in lumbar spinal fusion, in keeping with our exclusive license agreement, using NELL-1 in combination with DBM, a demineralized bone matrix from Musculoskeletal Transplant Foundation (“MTF”). The NELL-1/DBM medical device is a combination product which is an osteopromotive recombinant protein that provides target specific control over bone regeneration. Leveraging the resources of investors and strategic partners, we have successfully surpassed four critical milestones:

- Demonstrating a successful small laboratory scale pilot run for the manufacturing of the recombinant NELL-1 protein in Chinese hamster ovary cells;
- Validation of protein dosing and efficacy in established large animal sheep models pilot study;
- Completed pivotal animal study; and
- Initiated a first-in-human pilot clinical trial in Australia.

Our lead product is expected to be purified NELL-1 mixed with 510(k) cleared DBM Demineralized Bone Putty recommended for use in conjunction with applicable hardware consistent with the indication. The NELL-1/DBM Fusion Device will be comprised of a single dose vial of NELL-1 recombinant protein freeze dried onto DBM. A vial of NELL-1/DBM will be sold in a convenience kit with a diluent and a syringe of 510(k) cleared demineralized bone (“DBM Putty”) produced by MTF. A delivery device will allow the surgeon to mix the reconstituted NELL-1 with the appropriate quantity of DBM Putty just prior to implantation.

The NELL-1/DBM Fusion Device is intended for use in lumbar spinal fusion and may have a variety of other spine and orthopedic applications. While the product is initially targeted at the lumbar spine fusion market, in keeping with our exclusive license agreement, we believe NELL-1’s novel set of characteristics, target specific mechanism of action, efficacy, safety and affordability position the product well for application in a variety of procedures including:

Spine Implants. Globally a \$3 billion market opportunity, this is the largest market for bone substitute product, representing greater than 70% of the total U.S. market according to Transparency Market Research. While use of the patient’s own bone, also referred to as autograft, to enhance fusion of vertebral segments remains the optimal use for this type of treatment, complications associated with use of autograft bone including pain, increased surgical time and infection limit its use.

Non-Union Trauma Cases. While the majority of fractures heal without the need for osteosynthetic products, bone substitutes are used in complicated breaks where the bone does not mend naturally. Globally an \$8 billion market opportunity, management believes that NELL-1 technology is expected to perform as well as other growth factors in this market.

Osteoporosis. Globally an \$11.2 billion market opportunity, the medical need to find a solution to counter a decrease in bone mass and density seen in women most frequently after menopause or a similar effect on astronauts in microgravity environments for an extended period is a major medical challenge. The systemic use of NELL-1 to stimulate bone regeneration throughout the body thereby increasing bone density could have a very significant impact on the treatment of osteoporosis.

We have completed two preclinical sheep studies that demonstrated our recombinant NELL-1 (“rhNELL-1”) growth factor effectively promotes bone formation in a phylogenetically advanced spine model. In addition, rhNELL-1 was shown to be well tolerated and there were no findings of inflammation. Our pivotal sheep study evaluated the effect of rhNELL-1 combined with DBM on lumbar interbody arthrodesis in an adult ovine model and demonstrated a 37.5% increased frequency of fusion at 26 weeks from the control.

Our first-in-man pilot clinical study commenced year end 2023 and will evaluate the safety and effectiveness of NB1 in adult subjects with spinal degenerative disc disease at one level from L2-S1, who may also have up to Grade 1 spondylolisthesis or Grade 1 retrolisthesis at the involved level who undergo transforaminal lumbar interbody fusion. The multi-center, prospective, randomized trial consists of 30 patients in Australia, with the primary end-point being fusion success at 12 months and change from baseline in the Oswestry Disability Index pain score. We expect completion of the trial 12 months following enrollment of the 30th patient. We intend to use the pilot clinical trial data from Australia to enable a future larger U.S. pivotal clinical study, prior to an FDA pre-market approval submission.

Our Business Strategy

Our business plan is to develop our target specific growth factor for bone regeneration that has demonstrated increases in the quantity and quality of bone, while displaying strong safety profile. Our spine fusion product focus entails advancing through clinical studies to achieve FDA approval for our target specific protein exhibiting efficacy and safety when compared to the gold standard for spine fusion (autografted). Continued capital funding is critical to facilitate the development of our Nell-1 technology through the clinical regulatory path.

Intellectual Property Risks

Our patent portfolio currently consists of nine patents and we intent to expand our portfolio through composition of matter, methods of use and methods of production patent applications, as the opportunity arises through the development of our platform technology. Our success will depend in part on our ability to obtain patents and product license rights, maintain trade secrets, and operate without infringing on the proprietary rights of others, both in the United States and other countries. There can be no assurance that patents issued to or licensed by us will not be challenged, invalidated, rendered unenforceable, or circumvented, or that the rights granted thereunder will provide proprietary protection or competitive advantages to us. The patent positions of medical device companies are uncertain and involve complex legal and factual questions. We may incur significant expenses in protecting our intellectual property and defending or assessing claims with respect to intellectual property owned by others. See “Risk Factors” on page 7 and other information included or incorporated by reference in this prospectus for a discussion of intellectual property risks to consider carefully before deciding to invest in our securities.

Our Management Team

We have two full-time employees. Jeffrey Frelick has served as our President and Chief Executive Officer since June 2019 and brings more than 25 years of leadership, operational, and investment experience in the life science industry. Deina Walsh has served as our Chief Financial Officer since November 2014.

Mr. Frelick previously served as our Chief Operating Officer from 2015 to June 2019. Prior to this Mr. Frelick spent 15 years on Wall Street as a sell-side analyst following the med-tech industry at investment banks Canaccord Genuity, ThinkEquity and Lazard. He also previously worked at Boston Biomedical Consultants where he provided strategic planning assistance, market research data and due diligence for diagnostic companies. He began his career at Becton Dickinson in sales and sales management positions after gaining technical experience as a laboratory technologist with Clinical Pathology Facility. Mr. Frelick received a B.S. in Biology from University of Pittsburgh and an M.B.A. from Suffolk University’s Sawyer Business School.

Ms. Walsh is a certified public accountant and owner/founder of DHW CPA, PLLC a Public Companies Accounting Oversight Board (PCAOB) registered firm since 2014. Prior to forming her firm, Ms. Walsh spent 13 years at a public accounting firm where as a partner she was actively responsible for leading firm audit engagements of publicly held entities in accordance with PCAOB standards and compliance with SEC regulations, including internal control requirements under section 404 of the Sarbanes-Oxley Act. Ms. Walsh had a global client base including entities throughout the United States, Canada and China. These entities encompass a diverse range of industries including manufacturing, wholesale, life sciences, pharmaceuticals, and technology. Her experience includes work with start-up companies and well-established operating entities. She has assisted many entities seeking debt and equity capital. Areas of specialty include mergers, acquisitions, reverse mergers, consolidations, complex equity structures, foreign currency translations and revenue recognition complexities. Ms. Walsh has an Associates of Science Degree in Business Administration from Monroe Community College and a Bachelor of Science Degree in Accounting from the State University of New York at Brockport.

We also have engaged and plan to continue to engage regulatory consultants to advise us on our dealings with the FDA and other foreign regulatory authorities and have been and will be required to retain additional consultants and employees. Our future performance will depend in part on our ability to successfully integrate newly hired officers into our management team and our ability to develop an effective working relationship among senior management. Losing key personnel or failing to recruit necessary additional personnel would impede our ability to attain our development objectives. See “Risk Factors” on page 7 and other information included or incorporated by reference in this prospectus for a discussion of management risks to consider carefully before deciding to invest in our securities.

Recent Developments

November 2023 Offering

On November 20, 2023 the Company sold and issued, in a registered direct offering (the “Registered Direct Offering”), 142,384 shares of common stock, at an offering price of \$5.12 per share to certain institutional investors (the “Purchasers”) pursuant to a securities purchase agreement (the “Purchase Agreement”). Pursuant to the Purchase Agreement, in a concurrent private placement (together with the Registered Direct Offering, the “Offering”), the Company issued to the Purchasers unregistered warrants (the “Warrants”) to purchase up to an aggregate of 142,384 shares of common stock, which represent 100% of the shares of common stock issued and sold in the Registered Direct Offering. The Warrants are exercisable at an exercise price of \$4.16 per share, are exercisable immediately upon issuance, and will expire five and one-half years from the date of issuance. In addition, the Company issued the Placement Agent as compensation in connection with the Offering, warrants (the “Placement Agent Warrants”) to purchase up to an aggregate of 8,543 shares of common stock (equal to 6.0% of the aggregate number of shares sold in the Registered Direct Offering). The Placement Agent Warrants have substantially the same terms and conditions as the Warrants, except that the Placement Agent Warrants will have a term of five years from the commencement of sales in the Offering and an exercise price of \$6.40 per share.

Nasdaq Panel Decision

On September 27, 2023, the Company received a written notice from the Nasdaq notifying the Company that it was not in compliance with the \$1.00 per share minimum bid price requirement set forth in Nasdaq Listing Rule 5550(a)(2) and that Nasdaq’s staff had determined to delist the Company’s securities (the “Staff Determination”). On November 30, 2023, the Company presented its plan for regaining and sustaining compliance with all applicable requirements for continued listing on Nasdaq before a Nasdaq Hearings Panel (the “Panel”), appealing the Staff Determination. On December 11, 2023, the Panel granted the Company’s request for continued listing on Nasdaq until January 12, 2024 subject to the Company meeting certain milestones related to its plan to effect a reverse stock split and demonstrate compliance with the minimum bid price requirement prior to January 12, 2024. The Company intends to implement its plan to meet the milestones set forth by the Panel prior to January 12, 2024.

Reverse Stock Split

On December 14, 2023, we filed a Certificate of Amendment to our Amended and Restated Certificate of Incorporation, as amended, with the Secretary of State of the State of Delaware to effect a 1-for-8 reverse stock split of our outstanding common stock. The reverse stock split became effective on December 20, 2023. The conversion or exercise prices of our issued and outstanding stock options and warrants were adjusted in connection with the reverse stock split. Unless otherwise noted, the share and per share information in this prospectus reflects the effect of the reverse stock split.

Litigation Update

Following a mediation session with Drs. Bessie (Chia) Soo and Kang (Eric) Ting, on the one hand (the “plaintiffs”), and the Company and Stephen LaNeve on the other hand (together with the Company, the “defendants”), we reached an agreement in principle with the plaintiffs relating to the claims for breach of contract and tortious interference with contract against the defendants filed in the United States District Court for the District of Massachusetts (the “Court”). While negotiations continue to reach a formal settlement agreement, we expect to settle the claims for \$750,000. The Company’s insurance carrier’s portion of the claim is expected to be \$400,000 less certain retention amounts. The parties are expected to file a joint stipulation to dismiss the action with prejudice with the Court after a settlement agreement can be reached. Until a formal settlement agreement is entered into, there can be no assurance that the claims will be settled or dismissed.

Resignation of Director

On December 27, 2023, Erick Lucera resigned as a director, effective upon the appointment of a new independent director.

Going Concern

We have a history of operating losses since inception and expect to incur additional near-term losses. As discussed further in “Management’s Discussion and Analysis - Liquidity and Capital Resources,” included in our Form 10-K for the fiscal year ended December 31, 2022 (the “2022 Form 10-K”), which is incorporated herein by reference, our auditor has included a “going concern” explanatory paragraph in its report on our consolidated financial statements for the fiscal year ended December 31, 2022, expressing substantial doubt about our ability to continue as an ongoing business for the next twelve months. Our consolidated financial statements do not include any adjustments that may result from the outcome of this uncertainty. If we cannot secure the financing needed to continue as a viable business, our shareholders may lose some or all of their investment in us.

Corporate Information

We were incorporated under the laws of the State of Delaware on October 18, 2007 as AFH Acquisition X, Inc. Pursuant to a Merger Agreement, dated September 19, 2014, by and among the Company, its wholly-owned subsidiary, Bone Biologics Acquisition Corp., a Delaware corporation (“Merger Sub”), and Bone Biologics, Inc., Merger Sub merged with and into Bone Biologics Inc., with Bone Biologics Inc. remaining as the surviving corporation in the merger. Upon the consummation of the merger, the separate existence of Merger Sub ceased. On September 22, 2014, the Company officially changed its name to “Bone Biologics Corporation” to more accurately reflect the nature of its business and Bone Biologics, Inc. became a wholly owned subsidiary of the Company. Bone Biologics, Inc. was incorporated in California on September 9, 2004.

Our principal executive offices are located at 2 Burlington Woods Drive, Suite 100, Burlington MA 01803 and our telephone number is (781) 552-4452. Our website address is www.bonebiologics.com. The information contained on our website is not incorporated by reference into this prospectus, and you should not consider any information contained on, or that can be accessed through, our website as part of this prospectus or in deciding whether to invest in our securities.

THE OFFERING

<i>Issuer:</i>	Bone Biologics Corporation.
<i>Common stock being offered by us:</i>	142,384 shares upon exercise of the warrants.
<i>Common stock outstanding prior to this offering:</i>	534,238 shares.
<i>Common stock to be outstanding after this offering:</i>	676,622 shares (assuming full exercise of the warrants for cash).
<i>Use of proceeds:</i>	We will not receive any of the proceeds from the sale of common stock by the selling stockholders. See “Use of Proceeds.”
<i>Reverse stock split:</i>	On December 20, 2023, we effected a 1-for-8 reverse stock split of our outstanding common stock. Unless otherwise noted, the share and per share information in this prospectus reflects the effect of the reverse stock split.
<i>Nasdaq trading symbol:</i>	Our common stock is listed on the Nasdaq Capital Market under the symbol “BBLG.”
<i>Risk factors:</i>	The securities offered by this prospectus are speculative and involve a high degree of risk. Investors purchasing securities should not purchase the securities unless they can afford the loss of their entire investment. See “Risk Factors” beginning on page 7.

The discussion above is based on 534,238 shares of our common stock outstanding as of January 3, 2024, and excludes the following:

- 34,310 shares of common stock issuable upon exercise of stock options outstanding at a weighted average exercise price of \$236.70 per share.
- 197,844 shares of common stock issuable upon exercise of outstanding common stock warrants with a weighted average exercise price of \$127.86 per share.
- 593,023 shares of common stock reserved for future grants pursuant to the Bone Biologics Corporation 2015 Equity Incentive Plan.

RISK FACTORS

Investing in our securities involves significant risks. Before you decide whether to purchase any of our securities, you should carefully consider the risks and uncertainties set forth Part I, Item 1A under the heading “Risk Factors” included in our most recent Annual Report on Form 10-K and in other reports we file with the SEC pursuant to the Securities Exchange Act of 1934, as amended (the “Exchange Act”), which are incorporated by reference into this prospectus. For more information, please see “Incorporation of Certain Information by Reference” and “Where You Can Find More Information.”

The risks and uncertainties described in any documents incorporated by reference herein are not the only ones facing us. Additional risks and uncertainties that we do not presently know about or that we currently believe are not material may also adversely affect our business. If any of the risks and uncertainties described in this prospectus or the documents incorporated by reference herein actually occur, our business, financial condition, results of operations and prospects could be adversely affected in a material way. The occurrence of any of these risks may cause you to lose all or part of your investment in the offered securities.

USE OF PROCEEDS

This prospectus relates to shares of our common stock that may be offered and sold from time to time by the selling stockholders. We will not receive any of the proceeds resulting from the sale of common stock by the selling stockholders.

However, we will receive gross proceeds of approximately \$590,000 from the cash exercise of the warrants by the selling stockholders, if any. We intend to use such proceeds for working capital and general corporate purposes. There is no assurance that the holders of the warrants will elect to exercise any or all of the warrants. The exercise price of the warrants is \$4.16 per share. We believe the likelihood that warrant holders will exercise their warrants, and therefore the amount of cash proceeds that we would receive, is highly dependent upon the trading price of our common stock. The closing price of our common stock on Nasdaq on January 3, 2024 was \$5.78 per share. If the trading price for our common stock is less than the exercise price of the warrants, we believe holders of the warrants will be unlikely to exercise their warrants for cash. To the extent that shares of common stock are issued pursuant to the exercise of warrants on a “cashless basis,” the amount of cash we would receive from the exercise of the warrants will decrease.

SELLING STOCKHOLDERS

This prospectus relates to the offering by the selling stockholders of up to 142,384 shares of common stock, which are issuable upon exercise of outstanding warrants.

The following table sets forth, based on information provided to us by the selling stockholders or known to us, the name of each selling stockholder, the number of shares offered by each selling stockholder, the number of shares of our common stock beneficially owned by the selling stockholder before this offering, and the number and percentage of shares of our common stock beneficially owned by the selling stockholder after the offering. The number of shares owned are those beneficially owned, as determined under the rules of the SEC, and the information is not necessarily indicative of beneficial ownership for any other purpose. Under these rules, beneficial ownership includes any shares of common stock as to which a person has sole or shared voting power or investment power and any shares of common stock which the person has the right to acquire within 60 days through the exercise of any option, warrant or right, through conversion of any security or pursuant to the automatic termination of a power of attorney or revocation of a trust, discretionary account or similar arrangement. To our knowledge, except as set forth below, none of the selling stockholders is a broker-dealer or an affiliate of a broker-dealer. None of the selling stockholders has had any position, office or other material relationship, within the past three years, with us or with any of our predecessors or affiliates.

We have assumed all shares of common stock reflected on the table will be sold from time to time in the offering covered by this prospectus. Because the selling stockholders may offer all or any portion of the shares of common stock listed in the table below, no estimate can be given as to the amount of those shares of common stock covered by this prospectus that will be held by the selling stockholders upon the termination of the offering.

Selling Stockholder	Number of Shares Beneficially Owned Before Offering	Number of Shares Offered (1)	Number of Shares Beneficially Owned After Offering	Percentage of Shares Beneficially Owned After Offering (2)
Armistice Capital, LLC (3)	38,813	34,180	4,633	*
Intracoastal Capital LLC (4)	37,137	37,110	27	*
Ionic Ventures LLC (5)	43,088	36,914	6,174	*
Lind Global II LP (6)	34,180	34,180	-	-

- * Less than 1%.
- (1) Represents shares issuable upon exercise of outstanding warrants. See “Prospectus Summary — The Offering.” The warrants are subject to a beneficial ownership limitation of 4.99% or 9.99%, as applicable, which such limitation restricts the selling stockholder from exercising that portion of the warrants that would result in the selling stockholder and its affiliates owning, after exercise, a number of shares of common stock in excess of the beneficial ownership limitation.
- (2) Based on 534,238 shares of common stock outstanding as of January 3, 2024, as adjusted to assume the cash exercise of the warrants and the sale of all shares offered hereby.
- (3) The securities are directly held by Armistice Capital Master Fund Ltd., a Cayman Islands exempted company (the “Master Fund”), and may be deemed to be beneficially owned by: (i) Armistice Capital, LLC (“Armistice Capital”), as the investment manager of the Master Fund; and (ii) Steven Boyd, as the Managing Member of Armistice Capital. The warrants are subject to a beneficial ownership limitation of 4.99%, which such limitation restricts the Selling Stockholder from exercising that portion of the warrants that would result in the Selling Stockholder and its affiliates owning, after exercise, a number of shares of common stock in excess of the beneficial ownership limitation. The address of Armistice Capital Master Fund Ltd. is c/o Armistice Capital, LLC, 510 Madison Avenue, 7th Floor, New York, NY 10022.
- (4) Mitchell P. Kopin (“Mr. Kopin”) and Daniel B. Asher (“Mr. Asher”), each of whom are managers of Intracoastal Capital LLC (“Intracoastal”), have shared voting control and investment discretion over the securities reported herein that are held by Intracoastal. As a result, each of Mr. Kopin and Mr. Asher may be deemed to have beneficial ownership (as determined under Section 13(d) of the Exchange Act) of the securities reported herein that are held by Intracoastal.
- (5) Brendan O’Neil (“Mr. O’Neil”) and Keith Coulston (“Mr. Coulston”), each of whom are managers of Ionic Ventures LLC (“Ionic”), have shared power to vote and/or dispose of the securities reported herein that are held by Ionic. As a result, each of Mr. O’Neil and Mr. Coulston may be deemed to have beneficial ownership (as determined under Section 13(d) of the Exchange Act) of the securities reported herein that are held by Ionic.
- (6) Lind Global Fund II LP (the “Lind Fund”) has sole voting and dispositive power with respect to the shares. Lind Global Partners II LLC (“Lind Partners”), the general partner of the Lind Fund, may be deemed to have sole voting and dispositive power with respect to the shares held by Lind Fund. Jeff Easton, the managing member of Lind Partners, may be deemed to have sole voting and dispositive power with respect to the shares held by Lind Fund.

PLAN OF DISTRIBUTION

The selling stockholders, which as used herein includes donees, pledgees, transferees or other successors-in-interest selling shares of common stock or interests in shares of common stock received after the date of this prospectus from a selling stockholder as a gift, pledge, partnership distribution or other transfer, may, from time to time, sell, transfer or otherwise dispose of any or all of their shares of common stock covered by this prospectus on any stock exchange, market or trading facility on which the shares of common stock are traded or in private transactions. These dispositions may be at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market price, at varying prices determined at the time of sale, or at negotiated prices.

The selling stockholders may use any one or more of the following methods when disposing of the shares of common stock:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent, but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- short sales effected after the date the registration statement of which this prospectus is a part is declared effective by the SEC;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- the in-kind distribution of the shares by an investment fund to its limited partners, members or other equity holders;
- a combination of any such methods of sale; and
- any other method permitted by applicable law.

The selling stockholders may sell all, some or none of the shares of common stock covered by this prospectus. If sold under the registration statement of which this prospectus forms a part, the shares of common stock will be freely tradeable in the hands of persons other than our affiliates that acquire such shares.

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, under this prospectus, or under an amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act of 1933, as amended (the “Securities Act”) amending the list of selling stockholders to include the pledgee, transferee or other successors in interest as a selling stockholder under this prospectus. The selling stockholders also may transfer the shares of common stock in other circumstances, in which case the transferees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

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

The aggregate proceeds to the selling stockholders from the sale of the common stock offered by the selling stockholders will be the purchase price of the common stock less discounts or commissions, if any. The selling stockholders reserve the right to accept and, together with their agents from time to time, to reject, in whole or in part, any proposed purchase of common stock to be made directly or through agents. We will not receive any of the proceeds from this offering.

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 under the Securities Act, provided that the selling stockholders meet the criteria and conforms to the requirements of that rule.

The selling stockholders and any underwriters, broker-dealers or agents that participate in the sale of the common stock or interests therein may be “underwriters” within the meaning of Section 2(a)(11) of the Securities Act. Any discounts, commissions, concessions or profit any selling stockholder earns on any resale of the shares of common stock covered by this prospectus may be underwriting discounts and commissions under the Securities Act. Selling stockholders who are “underwriters” within the meaning of Section 2(a)(11) of the Securities Act will be subject to the prospectus delivery requirements of the Securities Act.

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

In order to comply with the securities laws of some states, if applicable, the common stock may be sold in these jurisdictions only through registered or licensed brokers or dealers. In addition, in some states the common stock may not be sold unless it has been registered or qualified for sale or an exemption from registration or qualification requirements is available and is complied with.

We have advised the selling stockholders that the anti-manipulation rules of Regulation M under the Exchange Act may apply to sales of shares in the market and to the activities of the selling stockholders and their affiliates. In addition, to the extent applicable we will make copies of this prospectus (as it may be supplemented or amended from time to time) available to the selling stockholders for the purpose of satisfying the prospectus delivery requirements of the Securities Act. The selling stockholders may indemnify any broker-dealer that participates in transactions involving the sale of the shares against certain liabilities, including liabilities arising under the Securities Act.

We have agreed to indemnify the selling stockholders against certain liabilities, including liabilities under the Securities Act and state securities laws, relating to the registration of the shares offered by this prospectus.

LEGAL MATTERS

The validity of the issuance of the common stock offered by us in this offering will be passed upon for us Harter Secrest & Emery LLP, Rochester, NY.

EXPERTS

The audited consolidated financial statements of Bone Biologics Corporation as of December 31, 2022 and 2021, and for each of the years then ended included in our annual report in the 2022 Form 10-K, are incorporated by reference into this prospectus and in the registration statement and have been so incorporated in reliance upon the report of Weinberg & Company, P.A., an independent registered public accounting firm (the report on the consolidated financial statements contains an explanatory paragraph regarding our ability to continue as a going concern), incorporated herein by reference, given on the authority of said firm as experts in auditing and accounting.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to “incorporate by reference” information into this document, which 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 an important part of this prospectus, and information that we file later with the SEC will automatically update and supersede this information.

We incorporate by reference the documents listed below and any future filings made with the SEC under Sections 13(a), 14, or 15(d) of the Exchange Act made subsequent to the date of this prospectus until the termination of the offering of the securities described in this prospectus (other than information in such filings that was “furnished,” under applicable SEC rules, rather than “filed”). We incorporate by reference the following documents or information that we have filed with the SEC:

- our Annual Report on [Form 10-K](#) for the year ended December 31, 2022, filed with the SEC on March 30, 2023 as amended by Amendment No. 1 on [Form 10-K/A](#) filed with the SEC on November 20, 2023;
- our Quarterly Reports on Form 10-Q for the periods ended [March 31, 2023](#), [June 30, 2023](#), and [September 30, 2023](#), filed with the SEC on May 15, 2023, August 14, 2023, and November 14, 2023, respectively;
- our Current Reports on Form 8-K filed with the SEC on [May 19, 2023](#), [June 6, 2023](#), [June 16, 2023](#), [July 5, 2023](#), [September 29, 2023](#), [October 24, 2023](#), [November 20, 2023](#), [December 13, 2023](#), [December 18, 2023](#) and [January 2, 2024](#); and
- The description of the Common Stock incorporated by reference to our Registration Statement on [Form 8-A](#) that was filed with the SEC on October 8, 2021, [Exhibit 4.5](#) to Amendment No. 1 to our Annual Report for the fiscal year ended December 31, 2022 on Form 10-K/A filed with the SEC on November 20, 2023, and any amendment or report filed for the purpose of updating such description.

To obtain copies of these filings, see “Where You Can Find More Information” in this prospectus. Nothing in this prospectus shall be deemed to incorporate information furnished, but not filed, with the SEC, including pursuant to Item 2.02 or Item 7.01 of Form 8-K and any corresponding information or exhibit furnished under Item 9.01 of Form 8-K.

Information in this prospectus supersedes related information in the documents listed above and information in subsequently filed documents supersedes related information in both this prospectus and the incorporated documents.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the periodic reporting requirements of the Exchange Act, and we will file periodic reports, proxy statements and other information with the SEC. These periodic reports, proxy statements and other information are available at www.sec.gov. We maintain a website at <https://www.bonebiologics.com>. We have not incorporated by reference into this prospectus the information contained in, or that can be accessed through, our website, and you should not consider it to be a part of this prospectus. You may access our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act with the SEC free of charge at our website as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. You may also request a copy of these filings (other than exhibits to these documents unless the exhibits are specifically incorporated by reference into these documents or referred to in this prospectus), at no cost, by writing us at 2 Burlington Woods Drive, Suite 100, Burlington, MA 01803 or contacting us at (781) 552-4452.

We have filed with the SEC a registration statement under the Securities Act relating to the offering of these securities. The registration statement, including the attached exhibits, contains additional relevant information about us and the securities. This prospectus does not contain all of the information set forth in the registration statement. You may review a copy of the registration statement and the documents incorporated by reference herein through the SEC's website at www.sec.gov.

BONE BIOLOGICS CORPORATION

142,384 Shares of Common Stock Offered by the Selling Stockholders

Prospectus

, 2024

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

The following table sets forth all expenses, other than the Placement Agent fees, payable by the registrant in connection with the sale of the securities being registered. All the amounts shown are estimates except the SEC registration fee.

	Amount to be paid
SEC registration fee	\$ 91
Accounting fees and expenses	\$ 5,000
Legal fees and expenses	\$ 10,000
Miscellaneous	\$ 4,909
Total	<u>\$ 20,000</u>

Item 15. Indemnification of Directors and Officers.

Section 102 of the DGCL permits a corporation to eliminate the personal liability of directors of a corporation to the corporation or its stockholders for monetary damages for a breach of fiduciary duty as a director, except where the director breached his duty of loyalty to us or our stockholders, acted or failed to act (an omission) not in good faith or that involved intentional misconduct or a knowing violation of law, engaged in intentional misconduct or knowingly violated a law, authorized the payment of a dividend or approved a stock repurchase in violation of the DGCL, or obtained an improper personal benefit. Our Amended and Restated Certificate of Incorporation, as amended (“Certificate of Incorporation”) provides that no director of the Company shall be personally liable to it or its stockholders for monetary damages for any breach of fiduciary duty as a director, notwithstanding any provision of law imposing such liability, except to the extent that the DGCL prohibits the elimination or limitation of liability of directors for breaches of fiduciary duty.

Section 145 of the DGCL provides that a corporation has the power to indemnify a director, officer, employee, or agent of the corporation, or a person serving at the request of the corporation for another corporation, partnership, joint venture, trust or other enterprise in related capacities against expenses (including attorneys’ fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with an action, suit or proceeding to which he was or is a party or is threatened to be made a party to any threatened, ending or completed action, suit or proceeding by reason of such position, if such person acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation, and, in any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful, except that, in the case of actions brought by or in the right of the corporation, no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or other adjudicating court determines that, despite the adjudication of liability but in view of all of the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

Our Certificate of Incorporation and Amended and Restated Bylaws provide indemnification for our directors and officers to the fullest extent permitted by the DGCL. We will indemnify each person who was or is a party or threatened to be made a party to any threatened, pending or completed action, suit or proceeding (other than an action by or in the right of us) by reason of the fact that he or she is or was, or has agreed to become, a director or officer, or is or was serving, or has agreed to serve, at our request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (all such persons being referred to as an “Indemnatee”), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys’ fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding and any appeal therefrom, if such Indemnatee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interests, and, with respect to any criminal action or proceeding, he or she had no reasonable cause to believe his or her conduct was unlawful. Our Certificate of Incorporation and Amended and Restated Bylaws provide that we will indemnify any Indemnatee who was or is a party to an action or suit by or in the right of us to procure a judgment in our favor by reason of the fact that the Indemnatee is or was, or has agreed to become, a director or officer, or is or was serving, or has agreed to serve, at our request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise, or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys’ fees) and, to the extent permitted by law, amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding, and any appeal therefrom, if the Indemnatee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interests, except that no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to us, unless a court determines that, despite such adjudication but in view of all of the circumstances, he or she is entitled to indemnification of such expenses. Notwithstanding the foregoing, to the extent that any Indemnatee has been successful, on the merits or otherwise, he or she will be indemnified by us against all expenses (including attorneys’ fees) actually and reasonably incurred in connection therewith. Expenses must be advanced to an Indemnatee under certain circumstances.

As of the date of this prospectus, we have entered into separate indemnification agreements with each of our directors and executive officers. Each indemnification agreement provides, among other things, for indemnification to the fullest extent permitted by law and our Certificate of Incorporation against any and all expenses, judgments, fines, penalties and amounts paid in settlement of any claim. The indemnification agreements provide for the advancement or payment of all expenses to the indemnitee and for the reimbursement to us if it is found that such indemnitee is not entitled to such indemnification. In addition, we have obtained a general liability insurance policy that covers certain liabilities of directors and officers of our corporation arising out of claims based on acts or omissions in their capacities as directors or officers.

Item 16. Exhibits.

The following exhibits to this registration statement included in the Exhibit Index are incorporated by reference.

EXHIBIT INDEX

4.1*	<u>Form of Warrant dated November 20, 2023</u>
5.1*	<u>Opinion of Harter Secrest & Emery LLP</u>
23.1*	<u>Consent of Independent Registered Public Accounting Firm, Weinberg & Company, P.A.</u>
23.2*	<u>Consent of Harter Secrest & Emery LLP (included in Exhibit 5.1)</u>
24.1*	<u>Power of Attorney (included in signature page hereto)</u>
99.1	<u>Form of Securities Purchase Agreement dated November 16, 2023 (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed on November 20, 2023)</u>
107*	<u>Filing Fee Table</u>

* Filed herewith.

Item 17. Undertakings

The undersigned registrant hereby undertakes:

- (a)(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 the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the SEC pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20% change in the maximum aggregate offering price set forth in the "Calculation of Filing Fee Tables" or "Calculation of Registration Fee" table, as applicable, in the effective registration statement; and
 - (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, however, that the undertakings set forth in paragraphs (a)(1)(i), (a)(1)(ii) and (a)(1)(iii) above 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 SEC by the registrant pursuant to section 13 or section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in this registration statement or are contained in a form of prospectus filed pursuant to Rule 424(b) that is part of this 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 of the registrant under the Securities Act to any purchaser, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. 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 first use, 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 date of first use.
- (b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.
- (c) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the Town of Burlington, Commonwealth of Massachusetts, on January 5, 2024.

BONE BIOLOGICS CORPORATION

By: /s/ Jeffrey Frelick
Name: Jeffrey Frelick
Title: Chief Executive Officer
(Principal Executive Officer)

POWER OF ATTORNEY

Each person whose signature appears below appoints Jeffrey Frelick and Deina H. Walsh, and each of them, each of whom may act without the joinder of the other, as his or her true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution for him and her and in his or her name, place and stead, in any and all capacities to sign any and all amendments (including post-effective amendments) to this registration statement, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents full power and authority to do and perform each and every act and thing requisite and necessary to be done, as fully to all intents and purposes as he might or would do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them or their or his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

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

Signature	Title	Date
<u>/s/ Jeffrey Frelick</u> Jeffrey Frelick	Chief Executive Officer (Principal Executive Officer)	January 5, 2024
<u>/s/ Deina H. Walsh</u> Deina H. Walsh	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	January 5, 2024
<u>/s/ Don R. Hankey</u> Don R. Hankey	Director	January 5, 2024
<u>/s/ Bruce Stroeve</u> Bruce Stroeve	Director	January 5, 2024
<u>/s/ Erick Lucera</u> Erick Lucera	Director	January 5, 2024
<u>/s/ Siddhesh Angle</u> Siddhesh Angle	Director	January 5, 2024

NEITHER THIS SECURITY NOR THE SECURITIES FOR WHICH THIS SECURITY IS EXERCISABLE HAVE BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION OR THE SECURITIES COMMISSION OF ANY STATE IN RELIANCE UPON AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE “SECURITIES ACT”), AND, ACCORDINGLY, MAY NOT BE OFFERED OR SOLD EXCEPT PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT OR PURSUANT TO AN AVAILABLE EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS. THIS SECURITY AND THE SECURITIES ISSUABLE UPON EXERCISE OF THIS SECURITY MAY BE PLEDGED IN CONNECTION WITH A BONA FIDE MARGIN ACCOUNT OR OTHER LOAN SECURED BY SUCH SECURITIES.

COMMON STOCK PURCHASE WARRANT

BONE BIOLOGICS CORPORATION

Warrant Shares: []

Issue Date: November 20, 2023

Initial Exercise Date: November 20, 2023

THIS COMMON STOCK PURCHASE WARRANT (the “Warrant”) certifies that, for value received, [] or its assigns (the “Holder”) is entitled, upon the terms and subject to the limitations on exercise and the conditions hereinafter set forth, at any time on or after the date set forth above (the “Initial Exercise Date”) and on or prior to 5:00 p.m. (New York City time) on May 21, 2029 (the “Termination Date”) but not thereafter, to subscribe for and purchase from Bone Biologics Corporation, a Delaware corporation (the “Company”), up to [] shares (as subject to adjustment hereunder, the “Warrant Shares”) of the Company’s Common Stock. The purchase price of one share of Common Stock under this Warrant shall be equal to the Exercise Price, as defined in Section 2(b).

Section 1. Definitions. Capitalized terms used and not otherwise defined herein shall have the meanings set forth in that certain Securities Purchase Agreement (the “Purchase Agreement”), dated November 16, 2023, among the Company and the purchasers signatory thereto.

Section 2. Exercise.

a) Exercise of Warrant. Exercise of the purchase rights represented by this Warrant may be made, in whole or in part, at any time or times on or after the Initial Exercise Date and on or before the Termination Date by delivery to the Company of a duly executed PDF copy submitted by e-mail (or e-mail attachment) of the Notice of Exercise in the form annexed hereto (the “Notice of Exercise”). Within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period (as defined in Section 2(d)(i) herein) following the date of exercise as aforesaid, the Holder shall deliver the aggregate Exercise Price for the Warrant Shares specified in the applicable Notice of Exercise by wire transfer or cashier’s check drawn on a United States bank unless the cashless exercise procedure specified in Section 2(c) below is specified in the applicable Notice of Exercise. No ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise be required. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company for cancellation as soon as reasonably practicable following the date on which the final Notice of Exercise is delivered to the Company. Partial exercises of this Warrant resulting in purchases of a portion of the total number of Warrant Shares available hereunder shall have the effect of lowering the outstanding number of Warrant Shares purchasable hereunder in an amount equal to the applicable number of Warrant Shares purchased. The Holder and the Company shall maintain records showing the number of Warrant Shares purchased and the date of such purchases. The Company shall deliver any objection to any Notice of Exercise within one (1) Trading Day of receipt of such notice. **The Holder and any assignee, by acceptance of this Warrant, acknowledge and agree that, by reason of the provisions of this paragraph, following the purchase of a portion of the Warrant Shares hereunder, the number of Warrant Shares available for purchase hereunder at any given time may be less than the amount stated on the face hereof.**

b) Exercise Price. The exercise price per share of Common Stock under this Warrant shall be **\$0.52**, subject to adjustment hereunder (the “Exercise Price”).

c) Cashless Exercise. If at the time of exercise hereof there is no effective registration statement registering, or the prospectus contained therein is not available for the resale of the Warrant Shares by the Holder, then this Warrant may also be exercised, in whole or in part, at such time by means of a “cashless exercise” in which the Holder shall be entitled to receive a number of Warrant Shares equal to the quotient obtained by dividing $[(A-B) (X)]$ by (A), where:

(A) = as applicable: (i) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise if such Notice of Exercise is (1) both executed and delivered pursuant to Section 2(a) hereof on a day that is not a Trading Day or (2) both executed and delivered pursuant to Section 2(a) hereof on a Trading Day prior to the opening of “regular trading hours” (as defined in Rule 600(b) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) at the option of the Holder, either (y) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise or (z) the Bid Price of the Common Stock on the principal Trading Market as reported by Bloomberg L.P. (“Bloomberg”) as of the time of the Holder’s execution of the applicable Notice of Exercise if such Notice of Exercise is executed during “regular trading hours” on a Trading Day and is delivered within two (2) hours thereafter (including until two (2) hours after the close of “regular trading hours” on a Trading Day) pursuant to Section 2(a) hereof or (iii) the VWAP on the date of the applicable Notice of Exercise if the date of such Notice of Exercise is a Trading Day and such Notice of Exercise is both executed and delivered pursuant to Section 2(a) hereof after the close of “regular trading hours” on such Trading Day;

(B) = the Exercise Price of this Warrant, as adjusted hereunder; and

(X) = the number of Warrant Shares that would be issuable upon exercise of this Warrant in accordance with the terms of this Warrant if such exercise were by means of a cash exercise rather than a cashless exercise.

“Bid Price” means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market, the bid price of the Common Stock for the time in question (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported on The Pink Open Market (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the Holders of a majority in interest of the Securities then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

“VWAP” means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market, the daily volume weighted average price of the Common Stock for such date (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if the OTCQB Venture Market (“OTCQB”) or the OTCQX Best Market (“OTCQX”) is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported on the Pink Open Market (“Pink Market”) operated by the OTC Markets, Inc. (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the Holders of a majority in interest of the Securities then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

If Warrant Shares are issued in such a cashless exercise, the parties acknowledge and agree that in accordance with Section 3(a)(9) of the Securities Act, the holding period of the Warrant Shares being issued may be tacked on to the holding period of this Warrant. The Company agrees not to take any position contrary to this Section 2(c).

d) Mechanics of Exercise.

i. Delivery of Warrant Shares Upon Exercise. The Company shall cause the Warrant Shares purchased hereunder to be transmitted by the Transfer Agent to the Holder by crediting the account of the Holder's or its designee's balance account with The Depository Trust Company through its Deposit or Withdrawal at Custodian system ("DWAC") if the Company is then a participant in such system and either (A) there is an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by the Holder or (B) the Warrant Shares are eligible for resale by the Holder without volume or manner-of-sale limitations pursuant to Rule 144 (assuming cashless exercise of the Warrants), and otherwise by physical delivery of a certificate or a book-entry certificate, registered in the Company's share register in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the address specified by the Holder in the Notice of Exercise by the date that is the earliest of (i) two (2) Trading Days after the delivery to the Company of the Notice of Exercise, (ii) one (1) Trading Day after delivery of the aggregate Exercise Price to the Company and (iii) the number of Trading Days comprising the Standard Settlement Period after the delivery to the Company of the Notice of Exercise (such date, the "Warrant Share Delivery Date"). Upon delivery of the Notice of Exercise, the Holder shall be deemed for all corporate purposes to have become the holder of record of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date of delivery of the Warrant Shares, provided that payment of the aggregate Exercise Price (other than in the case of a cashless exercise) is received by the Warrant Share Delivery Date. If the Company fails for any reason to deliver to the Holder the Warrant Shares subject to a Notice of Exercise by the Warrant Share Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Warrant Shares subject to such exercise (based on the VWAP of the Common Stock on the date of the applicable Notice of Exercise), \$10 per Trading Day (increasing to \$20 per Trading Day on the third (3rd) Trading Day after the Warrant Share Delivery Date) for each Trading Day after such Warrant Share Delivery Date until such Warrant Shares are delivered or Holder rescinds such exercise. The Company agrees to maintain a transfer agent that is a participant in the FAST program so long as this Warrant remains outstanding and exercisable. As used herein, "Standard Settlement Period" means the standard settlement period, expressed in a number of Trading Days, on the Company's primary Trading Market with respect to the Common Stock as in effect on the date of delivery of the Notice of Exercise.

ii. Delivery of New Warrants Upon Exercise. If this Warrant shall have been exercised in part, the Company shall, at the request of a Holder and upon surrender of this Warrant certificate, at the time of delivery of the Warrant Shares, deliver to the Holder a new Warrant evidencing the rights of the Holder to purchase the unpurchased Warrant Shares called for by this Warrant, which new Warrant shall in all other respects be identical with this Warrant.

iii. Rescission Rights. If the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares pursuant to Section 2(d)(i) by the Warrant Share Delivery Date, then the Holder will have the right to rescind such exercise.

iv. Compensation for Buy-In on Failure to Timely Deliver Warrant Shares Upon Exercise. In addition to any other rights available to the Holder, if the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares in accordance with the provisions of Section 2(d)(i) above pursuant to an exercise on or before the Warrant Share Delivery Date, and if after such date the Holder is required by its broker to purchase (in an open market transaction or otherwise) or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a "Buy-In"), then the Company shall (A) pay in cash to the Holder the amount, if any, by which (x) the Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased exceeds (y) the amount obtained by multiplying (1) the number of Warrant Shares that the Company was required to deliver to the Holder in connection with the exercise at issue times (2) the price at which the sell order giving rise to such purchase obligation was executed, and (B) at the option of the Holder, either reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored (in which case such exercise shall be deemed rescinded) or deliver to the Holder the number of shares of Common Stock that would have been issued had the Company timely complied with its exercise and delivery obligations hereunder. For example, if the Holder purchases Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted exercise of shares of Common Stock with an aggregate sale price giving rise to such purchase obligation of \$10,000, under clause (A) of the immediately preceding sentence the Company shall be required to pay the Holder \$1,000. The Holder shall provide the Company written notice indicating the amounts payable to the Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver shares of Common Stock upon exercise of the Warrant as required pursuant to the terms hereof.

v. No Fractional Shares or Scrip. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of this Warrant. As to any fraction of a share which the Holder would otherwise be entitled to purchase upon such exercise, the Company shall, at its election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the Exercise Price or round up to the next whole share.

vi. Charges, Taxes and Expenses. Issuance of Warrant Shares shall be made without charge to the Holder for any issue or transfer tax or other incidental expense in respect of the issuance of such Warrant Shares, all of which taxes and expenses shall be paid by the Company, and such Warrant Shares shall be issued in the name of the Holder or in such name or names as may be directed by the Holder; provided, however, that in the event that Warrant Shares are to be issued in a name other than the name of the Holder, this Warrant when surrendered for exercise shall be accompanied by the Assignment Form attached hereto duly executed by the Holder and the Company may require, as a condition thereto, the payment of a sum sufficient to reimburse it for any transfer tax incidental thereto. The Company shall pay all Transfer Agent fees required for same-day processing of any Notice of Exercise and all fees to the Depository Trust Company (or another established clearing corporation performing similar functions) required for same-day electronic delivery of the Warrant Shares.

vii. Closing of Books. The Company will not close its stockholder books or records in any manner which prevents the timely exercise of this Warrant, pursuant to the terms hereof.

e) Holder's Exercise Limitations. The Company shall not effect any exercise of this Warrant, and a Holder shall not have the right to exercise any portion of this Warrant, pursuant to Section 2 or otherwise, to the extent that after giving effect to such issuance after exercise as set forth on the applicable Notice of Exercise, the Holder (together with the Holder's Affiliates, and any other Persons acting as a group together with the Holder or any of the Holder's Affiliates (such Persons, "Attribution Parties")), would beneficially own in excess of the Beneficial Ownership Limitation (as defined below). For purposes of the foregoing sentence, the number of shares of Common Stock beneficially owned by the Holder and its Affiliates and Attribution Parties shall include the number of shares of Common Stock issuable upon exercise of this Warrant with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (i) exercise of the remaining, nonexercised portion of this Warrant beneficially owned by the Holder or any of its Affiliates or Attribution Parties and (ii) exercise or conversion of the unexercised or nonconverted portion of any other securities of the Company (including, without limitation, any other Common Stock Equivalents) subject to a limitation on conversion or exercise analogous to the limitation contained herein beneficially owned by the Holder or any of its Affiliates or Attribution Parties. Except as set forth in the preceding sentence, for purposes of this Section 2(e), beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder, it being acknowledged by the Holder that the Company is not representing to the Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and the Holder is solely responsible for any schedules required to be filed in accordance therewith. To the extent that the limitation contained in this Section 2(e) applies, the determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable shall be in the sole discretion of the Holder, and the submission of a Notice of Exercise shall be deemed to be the Holder's determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable, in each case subject to the Beneficial Ownership Limitation, and the Company shall have no obligation to verify or confirm the accuracy of such determination. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 2(e), in determining the number of outstanding shares of Common Stock, a Holder may rely on the number of outstanding shares of Common Stock as reflected in (A) the Company's most recent periodic or annual report filed with the Commission, as the case may be, (B) a more recent public announcement by the Company or (C) a more recent written notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written or oral request of a Holder, the Company shall within one (1) Trading Day confirm orally and in writing to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder or its Affiliates or Attribution Parties since the date as of which such number of outstanding shares of Common Stock was reported. The "Beneficial Ownership Limitation" shall be 4.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon exercise of this Warrant. The Holder, upon notice to the Company, may increase or decrease the Beneficial Ownership Limitation provisions of this Section 2(e), provided that the Beneficial Ownership Limitation in no event exceeds 9.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon exercise of this Warrant held by the Holder and the provisions of this Section 2(e) shall continue to apply. Any increase in the Beneficial Ownership Limitation will not be effective until the 61st day after such notice is delivered to the Company. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 2(e) to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation herein contained or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitations contained in this paragraph shall apply to a successor holder of this Warrant.

Section 3. Certain Adjustments.

a) Stock Dividends and Splits. If the Company, at any time while this Warrant is outstanding: (i) pays a stock dividend or otherwise makes a distribution or distributions on shares of its Common Stock or any other equity or equity equivalent securities payable in shares of Common Stock (which, for avoidance of doubt, shall not include any shares of Common Stock issued by the Company upon exercise of this Warrant), (ii) subdivides outstanding shares of Common Stock into a larger number of shares, (iii) combines (including by way of reverse stock split) outstanding shares of Common Stock into a smaller number of shares, or (iv) issues by reclassification of shares of the Common Stock any shares of capital stock of the Company, then in each case the Exercise Price shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock (excluding treasury shares, if any) outstanding immediately before such event and of which the denominator shall be the number of shares of Common Stock outstanding immediately after such event, and the number of shares issuable upon exercise of this Warrant shall be proportionately adjusted such that the aggregate Exercise Price of this Warrant shall remain unchanged. Any adjustment made pursuant to this Section 3(a) shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision, combination or re-classification.

b) Subsequent Rights Offerings. In addition to any adjustments pursuant to Section 3(a) above, if at any time the Company grants, issues or sells any Common Stock Equivalents or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of shares of Common Stock (the "Purchase Rights"), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the grant, issue or sale of such Purchase Rights (provided, however, that to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Purchase Right to such extent (or beneficial ownership of such shares of Common Stock as a result of such Purchase Right to such extent) and such Purchase Right to such extent shall be held in abeyance for the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

c) Pro Rata Distributions. During such time as this Warrant is outstanding, if the Company shall declare or make any dividend or other distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property or options by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a "Distribution"), at any time after the issuance of this Warrant, then, in each such case, the Holder shall be entitled to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date of which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution (provided, however, that to the extent that the Holder's right to participate in any such Distribution would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Distribution to such extent (or in the beneficial ownership of any shares of Common Stock as a result of such Distribution to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

d) Fundamental Transaction. If, at any time while this Warrant is outstanding, (i) the Company, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Company with or into another Person, (ii) the Company (or any Subsidiary), directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of the Company's assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Company or another Person) is completed pursuant to which holders of Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding Common Stock or 50% or more of the voting power of the common equity of the Company, (iv) the Company, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property, or (v) the Company, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off, merger or scheme of arrangement) with another Person or group of Persons whereby such other Person or group acquires 50% or more of the outstanding shares of Common Stock or 50% or more of the voting power of the common equity of the Company (each a "Fundamental Transaction"), then, upon any subsequent exercise of this Warrant, the Holder shall have the right to receive, for each Warrant Share that would have been issuable upon such exercise immediately prior to the occurrence of such Fundamental Transaction, at the option of the Holder (without regard to any limitation in Section 2(e) on the exercise of this Warrant), the number of shares of Common Stock of the successor or acquiring corporation or of the Company, if it is the surviving corporation, and any additional consideration (the "Alternate Consideration") receivable as a result of such Fundamental Transaction by a holder of the number of shares of Common Stock for which this Warrant is exercisable immediately prior to such Fundamental Transaction (without regard to any limitation in Section 2(e) on the exercise of this Warrant). For purposes of any such exercise, the determination of the Exercise Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Fundamental Transaction, and the Company shall apportion the Exercise Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any exercise of this Warrant following such Fundamental Transaction. Notwithstanding anything to the contrary, in the event of a Fundamental Transaction, the Company or any Successor Entity (as defined below) shall, at the Holder's option, exercisable at any time concurrently with, or within 30 days after, the consummation of the Fundamental Transaction (or, if later, the date of the public announcement of the applicable Fundamental Transaction), purchase this Warrant from the Holder by paying to the Holder an amount of cash equal to the Black Scholes Value (as defined below) of the remaining unexercised portion of this Warrant on the date of the consummation of such Fundamental Transaction; provided, however, that, if the Fundamental Transaction is not within the Company's control, including not approved by the Company's Board of Directors, the Holder shall only be entitled to receive from the Company or any Successor Entity the same type or form of consideration (and in the same proportion), at the Black Scholes Value of the unexercised portion of this Warrant, that is being offered and paid to the holders of Common Stock of the Company in connection with the Fundamental Transaction, whether that consideration be in the form of cash, stock or any combination thereof, or whether the holders of Common Stock are given the choice to receive from among alternative forms of consideration in connection with the Fundamental Transaction; provided, further, that if holders of Common Stock of the Company are not offered or paid any consideration in such Fundamental Transaction, such holders of Common Stock will be deemed to have received common stock of the Successor Entity (which Entity may be the Company following such Fundamental Transaction) in such Fundamental Transaction. "Black Scholes Value" means the value of this Warrant based on the Black-Scholes Option Pricing Model obtained from the "OV" function on Bloomberg determined as of the day of consummation of the applicable Fundamental Transaction for pricing purposes and reflecting (A) a risk-free interest rate corresponding to the U.S. Treasury rate for a period equal to the time between the date of the public announcement of the applicable contemplated Fundamental Transaction and the Termination Date, (B) an expected volatility equal to the greater of (1) the 30 day volatility, (2) the 100 day volatility or (3) the 365 day volatility, each of clauses (1)-(3) as obtained from the HVT function on Bloomberg (determined utilizing a 365 day annualization factor) as of the Trading Day immediately following the public announcement of the applicable contemplated Fundamental Transaction, (C) the underlying price per share used in such calculation shall be the highest VWAP during the period beginning on the Trading Day immediately preceding the public announcement of the applicable contemplated Fundamental Transaction (or the consummation of the applicable Fundamental Transaction, if earlier) and ending on the Trading Day of the Holder's request pursuant to this Section 3(d) and (D) a remaining option time equal to the time between the date of the public announcement of the applicable contemplated Fundamental Transaction and the Termination Date and (E) a zero cost of borrow. The payment of the Black Scholes Value will be made by wire transfer of immediately available funds (or such other consideration) within the later of (i) five Business Days of the Holder's election and (ii) the date of consummation of the Fundamental Transaction. The Company shall cause any successor entity in a Fundamental Transaction in which the Company is not the survivor (the "Successor Entity") to assume in writing all of the obligations of the Company under this Warrant and the other Transaction Documents in accordance with the provisions of this Section 3(d) pursuant to written agreements in form and substance reasonably satisfactory to the Holder and approved by the Holder (without unreasonable delay) prior to such Fundamental Transaction and shall, at the option of the Holder, deliver to the Holder in exchange for this Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant which is exercisable for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the shares of Common Stock acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction), and which is reasonably satisfactory in form and substance to the Holder. Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall be added to the term "Company" under this Warrant (so that from and after the occurrence or consummation of such Fundamental Transaction, each and every provision of this Warrant and the other Transaction Documents referring to the "Company" shall refer instead to each of the Company and the Successor Entity or Successor Entities, jointly and severally), and the Successor Entity or Successor Entities, jointly and severally with the Company, may exercise every right and power of the Company prior thereto and the Successor Entity or Successor Entities shall assume all of the obligations of the Company prior thereto under this Warrant and the other Transaction Documents with the same effect as if the Company and such Successor Entity or Successor Entities, jointly and

severally, had been named as the Company herein. For the avoidance of doubt, the Holder shall be entitled to the benefits of the provisions of this Section 3(d) regardless of (i) whether the Company has sufficient authorized shares of Common Stock for the issuance of Warrant Shares and/or (ii) whether a Fundamental Transaction occurs prior to the Initial Exercise Date.

e) Calculations. All calculations under this Section 3 shall be made to the nearest cent or the nearest 1/100th of a share, as the case may be. For purposes of this Section 3, the number of shares of Common Stock deemed to be issued and outstanding as of a given date shall be the sum of the number of shares of Common Stock (excluding treasury shares, if any) issued and outstanding.

f) Notice to Holder.

i. Adjustment to Exercise Price. Whenever the Exercise Price is adjusted pursuant to any provision of this Section 3, the Company shall promptly deliver to the Holder by email a notice setting forth the Exercise Price after such adjustment and any resulting adjustment to the number of Warrant Shares and setting forth a brief statement of the facts requiring such adjustment.

ii. Notice to Allow Exercise by Holder. If (A) the Company shall declare a dividend (or any other distribution in whatever form) on the Common Stock, (B) the Company shall declare a special nonrecurring cash dividend on or a redemption of the Common Stock, (C) the Company shall authorize the granting to all holders of the Common Stock rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any rights, (D) the approval of any stockholders of the Company shall be required in connection with any reclassification of the Common Stock, any consolidation or merger to which the Company (or any of its Subsidiaries) is a party, any sale or transfer of all or substantially all of its assets, or any compulsory share exchange whereby the Common Stock is converted into other securities, cash or property, or (E) the Company shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Company, then, in each case, the Company shall cause to be delivered by email to the Holder at its last email address as it shall appear upon the Warrant Register of the Company, at least 20 calendar days prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of the Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined or (y) the date on which such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of the Common Stock of record shall be entitled to exchange their shares of the Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange; provided that the failure to deliver such notice or any defect therein or in the delivery thereof shall not affect the validity of the corporate action required to be specified in such notice. To the extent that any notice provided in this Warrant constitutes, or contains, material, nonpublic information regarding the Company or any of the Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K. The Holder shall remain entitled to exercise this Warrant during the period commencing on the date of such notice to the effective date of the event triggering such notice except as may otherwise be expressly set forth herein.

Section 4. Transfer of Warrant.

a) Transferability. Subject to compliance with any applicable securities laws and the conditions set forth in Section 4(d) hereof and to the provisions of Section 4.1 of the Purchase Agreement, this Warrant and all rights hereunder (including, without limitation, any registration rights) are transferable, in whole or in part, upon surrender of this Warrant at the principal office of the Company or its designated agent, together with a written assignment of this Warrant substantially in the form attached hereto duly executed by the Holder or its agent or attorney and funds sufficient to pay any transfer taxes payable upon the making of such transfer. Upon such surrender and, if required, such payment, the Company shall execute and deliver a new Warrant or Warrants in the name of the assignee or assignees, as applicable, and in the denomination or denominations specified in such instrument of assignment, and shall issue to the assignor a new Warrant evidencing the portion of this Warrant not so assigned, and this Warrant shall promptly be cancelled. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company unless the Holder has assigned this Warrant in full, in which case, the Holder shall surrender this Warrant to the Company within three (3) Trading Days of the date on which the Holder delivers an assignment form to the Company assigning this Warrant in full. The Warrant, if properly assigned in accordance herewith, may be exercised by a new holder for the purchase of Warrant Shares without having a new Warrant issued.

b) New Warrants. This Warrant may be divided or combined with other Warrants upon presentation hereof at the aforesaid office of the Company, together with a written notice specifying the names and denominations in which new Warrants are to be issued, signed by the Holder or its agent or attorney. Subject to compliance with Section 4(a), as to any transfer which may be involved in such division or combination, the Company shall execute and deliver a new Warrant or Warrants in exchange for the Warrant or Warrants to be divided or combined in accordance with such notice. All Warrants issued on transfers or exchanges shall be dated the Issue Date of this Warrant and shall be identical with this Warrant except as to the number of Warrant Shares issuable pursuant thereto.

c) Warrant Register. The Company shall register this Warrant, upon records to be maintained by the Company for that purpose (the “Warrant Register”), in the name of the record Holder hereof from time to time. The Company may deem and treat the registered Holder of this Warrant as the absolute owner hereof for the purpose of any exercise hereof or any distribution to the Holder, and for all other purposes, absent actual notice to the contrary.

d) Transfer Restrictions. If, at the time of the surrender of this Warrant in connection with any transfer of this Warrant, the transfer of this Warrant shall not be either (i) registered pursuant to an effective registration statement under the Securities Act and under applicable state securities or blue sky laws or (ii) eligible for resale without volume or manner-of-sale restrictions or current public information requirements pursuant to Rule 144, the Company may require, as a condition of allowing such transfer, that the Holder or transferee of this Warrant, as the case may be, comply with the provisions of Section 5.7 of the Purchase Agreement.

e) Representation by the Holder. The Holder, by the acceptance hereof, represents and warrants that it is acquiring this Warrant and, upon any exercise hereof, will acquire the Warrant Shares issuable upon such exercise, for its own account and not with a view to or for distributing or reselling such Warrant Shares or any part thereof in violation of the Securities Act or any applicable state securities law, except pursuant to sales registered or exempted under the Securities Act.

Section 5. Miscellaneous.

a) No Rights as Stockholder Until Exercise; No Settlement in Cash. This Warrant does not entitle the Holder to any voting rights, dividends or other rights as a stockholder of the Company prior to the exercise hereof as set forth in Section 2(d)(i), except as expressly set forth in Section 3. Without limiting any rights of a Holder to receive Warrant Shares on a “cashless exercise” pursuant to Section 2(c) or to receive cash payments pursuant to Section 2(d)(i) and Section 2(d)(iv) herein, in no event shall the Company be required to net cash settle an exercise of this Warrant.

b) Loss, Theft, Destruction or Mutilation of Warrant. The Company covenants that upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Warrant or any stock certificate relating to the Warrant Shares, and in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to it (which, in the case of the Warrant, shall not include the posting of any bond), and upon surrender and cancellation of such Warrant or stock certificate, if mutilated, the Company will make and deliver a new Warrant or stock certificate of like tenor and dated as of such cancellation, in lieu of such Warrant or stock certificate.

c) Saturdays, Sundays, Holidays, etc. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall not be a Trading Day, then, such action may be taken or such right may be exercised on the next succeeding Trading Day.

d) Authorized Shares.

The Company covenants that, during the period the Warrant is outstanding, it will reserve from its authorized and unissued Common Stock a sufficient number of shares to provide for the issuance of the Warrant Shares upon the exercise of any purchase rights under this Warrant. The Company further covenants that its issuance of this Warrant shall constitute full authority to its officers who are charged with the duty of issuing the necessary Warrant Shares upon the exercise of the purchase rights under this Warrant. The Company will take all such reasonable action as may be necessary to assure that such Warrant Shares may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of the Trading Market upon which the Common Stock may be listed. The Company covenants that all Warrant Shares which may be issued upon the exercise of the purchase rights represented by this Warrant will, upon exercise of the purchase rights represented by this Warrant and payment for such Warrant Shares in accordance herewith, be duly authorized, validly issued, fully paid and nonassessable and free from all taxes, liens and charges created by the Company in respect of the issue thereof (other than taxes in respect of any transfer occurring contemporaneously with such issue).

Except and to the extent as waived or consented to by the Holder, the Company shall not by any action, including, without limitation, amending its certificate of incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate to protect the rights of Holder as set forth in this Warrant against impairment. Without limiting the generality of the foregoing, the Company will (i) not increase the par value of any Warrant Shares above the amount payable therefor upon such exercise immediately prior to such increase in par value, (ii) take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable Warrant Shares upon the exercise of this Warrant and (iii) use commercially reasonable efforts to obtain all such authorizations, exemptions or consents from any public regulatory body having jurisdiction thereof, as may be, necessary to enable the Company to perform its obligations under this Warrant.

Before taking any action which would result in an adjustment in the number of Warrant Shares for which this Warrant is exercisable or in the Exercise Price, the Company shall obtain all such authorizations or exemptions thereof, or consents thereto, as may be necessary from any public regulatory body or bodies having jurisdiction thereof.

e) Jurisdiction. All questions concerning the construction, validity, enforcement and interpretation of this Warrant shall be determined in accordance with the provisions of the Purchase Agreement.

f) Restrictions. The Holder acknowledges that the Warrant Shares acquired upon the exercise of this Warrant, if not registered, and the Holder does not utilize cashless exercise, will have restrictions upon resale imposed by state and federal securities laws.

g) Nonwaiver and Expenses. No course of dealing or any delay or failure to exercise any right hereunder on the part of Holder shall operate as a waiver of such right or otherwise prejudice the Holder's rights, powers or remedies, notwithstanding the fact that the right to exercise this Warrant terminates on the Termination Date. Without limiting any other provision of this Warrant, if the Company willfully and knowingly fails to comply with any provision of this Warrant, which results in any material damages to the Holder, the Company shall pay to the Holder such amounts as shall be sufficient to cover any costs and expenses including, but not limited to, reasonable attorneys' fees, including those of appellate proceedings, incurred by the Holder in collecting any amounts due pursuant hereto or in otherwise enforcing any of its rights, powers or remedies hereunder.

h) Notices. Any notice, request or other document required or permitted to be given or delivered to the Holder by the Company shall be delivered in accordance with the notice provisions of the Purchase Agreement.

i) Limitation of Liability. No provision hereof, in the absence of any affirmative action by the Holder to exercise this Warrant to purchase Warrant Shares, and no enumeration herein of the rights or privileges of the Holder, shall give rise to any liability of the Holder for the purchase price of any Common Stock or as a stockholder of the Company, whether such liability is asserted by the Company or by creditors of the Company.

j) Remedies. The Holder, in addition to being entitled to exercise all rights granted by law, including recovery of damages, will be entitled to specific performance of its rights under this Warrant. The Company agrees that monetary damages would not be adequate compensation for any loss incurred by reason of a breach by it of the provisions of this Warrant and hereby agrees to waive and not to assert the defense in any action for specific performance that a remedy at law would be adequate.

k) Successors and Assigns. Subject to applicable securities laws, this Warrant and the rights and obligations evidenced hereby shall inure to the benefit of and be binding upon the successors and permitted assigns of the Company and the successors and permitted assigns of Holder. The provisions of this Warrant are intended to be for the benefit of any Holder from time to time of this Warrant and shall be enforceable by the Holder or holder of Warrant Shares.

l) Amendment. This Warrant may be modified or amended or the provisions hereof waived with the written consent of the Company, on the one hand, and the Holder of this Warrant, on the other hand.

m) Severability. Wherever possible, each provision of this Warrant shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Warrant shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provisions or the remaining provisions of this Warrant.

n) Headings. The headings used in this Warrant are for the convenience of reference only and shall not, for any purpose, be deemed a part of this Warrant.

(Signature Page Follows)

IN WITNESS WHEREOF, the Company has caused this Warrant to be executed by its officer thereunto duly authorized as of the date first above indicated.

BONE BIOLOGICS CORPORATION

By: /s/ Jeffrey Frelick
Name: Jeffrey Frelick
Title: Chief Executive Officer

EXHIBIT A
NOTICE OF EXERCISE

TO: **BONE BIOLOGICS CORPORATION**

(1) The undersigned hereby elects to purchase Warrant Shares of the Company pursuant to the terms of the attached Warrant (only if exercised in full), and tenders herewith payment of the exercise price in full, together with all applicable transfer taxes, if any.

(2) Payment shall take the form of (check applicable box):

- ☐ in lawful money of the United States; or
- ☐ if permitted the cancellation of such number of Warrant Shares as is necessary, in accordance with the formula set forth in subsection 2(c), to exercise this Warrant with respect to the maximum number of Warrant Shares purchasable pursuant to the cashless exercise procedure set forth in subsection 2(c).

(3) Please issue said Warrant Shares in the name of the undersigned or in such other name as is specified below:

The Warrant Shares shall be delivered to the following DWAC Account Number:

(4) Accredited Investor. The undersigned is an “accredited investor” as defined in Regulation D promulgated under the Securities Act of 1933, as amended.

[SIGNATURE OF HOLDER]

Name of Investing Entity: _____
Signature of Authorized Signatory of Investing Entity:
Name of Authorized Signatory: _____
Title of Authorized Signatory: _____
Date: _____

EXHIBIT B

ASSIGNMENT FORM

(To assign the foregoing Warrant, execute this form and supply required information. Do not use this form to exercise the Warrant to purchase shares.)

FOR VALUE RECEIVED, the foregoing Warrant and all rights evidenced thereby are hereby assigned to

Name: _____
(Please Print)

Address: _____
(Please Print)

Phone Number: _____

Email Address: _____

Dated: _____, _____

Holder’s Signature: _____

Holder’s Address: _____



Harter Secrest & Emery LLP

ATTORNEYS AND COUNSELORS

WWW.HSELAW.COM

January 5, 2024

Bone Biologics Corporation
2 Burlington Woods Dre., Suite 100
Burlington, MA 01803

Re: Registration Statement on Form S-3

Ladies and Gentlemen:

We have acted as counsel to Bone Biologics Corporation, a Delaware corporation (the “Company”), in connection with its filing of a Registration Statement on Form S-3, together with the exhibits thereto (the “Registration Statement”) to be filed on the date hereof, with the Securities and Exchange Commission under the Securities Act of 1933, as amended (the “Securities Act”), with respect to the registration of 142,384 shares of the Company’s common stock (the “Shares”), par value \$0.001 per share, issuable upon exercise of previously issued warrants (the “Warrants”). This opinion is furnished to you at your request to enable you to fulfill the requirements of Item 601(b)(5) of Regulation S-K in connection with the filing of the Registration Statement.

For purposes of this opinion, we have with your permission made the following assumptions, in each case without independent verification: (i) the due authorization, execution and delivery of all documents by all the parties thereto; (ii) the genuineness of all signatures on all documents submitted to us; (iii) the authenticity and completeness of all documents, corporate records, certificates and other instruments (the “Records”) submitted to us; (iv) that photocopy, electronic, certified, conformed, facsimile and other copies submitted to us of the Records conform to the original Records; (v) the legal capacity of all individuals executing documents; (vi) that all documents are the valid and binding obligations of each of the parties thereto, enforceable against such parties in accordance with their respective terms and that no such documents have been amended or terminated orally or in writing; (vii) that the statements contained in the certificates and comparable documents of public officials, officers and representatives of the Company and other persons on which we have relied for the purposes of this opinion are true and correct; and (viii) that at the time the Shares are issued, the Company will be validly existing and there will be sufficient Shares authorized under the Company’s Amended and Restated Articles of Incorporation, as amended and then in effect, and not otherwise issued or reserved for issuance. As to all questions of fact material to this opinion, we have relied (without independent verification) upon certificates or comparable documents of officers and representatives of the Company.

1600 BAUSCH & LOMB PLACE ROCHESTER, NY 14604-2711 PHONE: 585.232.6500 FAX: 585.232.2152

rochester, ny • buffalo, ny • albany, ny • corning, ny • new york, ny

Bone Biologics Corporation
January 5, 2024
Page 2

Based upon, subject to and limited by the foregoing, we are of the opinion that the Shares have been duly authorized for issuance and, when issued and delivered by the Company upon valid exercise of the Warrants and against receipt of the exercise price therefor, the Shares will be validly issued, fully paid and non-assessable.

We express no opinion with respect to the effect of any law other than the law of the State of New York and the applicable provisions of the Delaware General Corporate Law as currently in effect.

This opinion letter has been prepared in accordance with the customary practice of lawyers who regularly give, and lawyers who regularly advise opinion recipients concerning, opinions of the type contained herein.

This opinion letter deals only with the specified legal issues expressly addressed herein, and you should not infer any opinion that is not explicitly addressed herein from any matter stated in this letter.

We consent to the use of this opinion as an exhibit to the Registration Statement. In giving such consent, we do not hereby admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act and the rules and regulations thereunder. This opinion is rendered to you as of the date hereof and we assume no obligation to advise you or any other person hereafter with regard to any change after the date hereof in the circumstances or the law that may bear on the matters set forth herein even though the changes may affect the legal analysis or legal conclusion or other matters in this letter.

Very truly yours,

/s/ Harter Secrest & Emery LLP

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in this Registration Statement (Registration Statement No. 333-_____) on Form S-3 of our report dated March 30, 2023, which includes an explanatory paragraph as to the Company’s ability to continue as a going concern, relating to the consolidated financial statements of Bone Biologics Corporation included in its Annual Report on Form 10-K for the year ended December 31, 2022, filed with the Securities and Exchange Commission. We also consent to the reference to our firm under the caption “Experts” in such Registration Statement and related Prospectus.

/s/ Weinberg & Company, P.A.
Los Angeles, California
January 5, 2024

Calculation of Filing Fee Tables

Form S-3
(Form Type)

Bone Biologics Corporation
(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered Securities and Carry Forward Securities

Security Type	Security Class Title	Fee Calculation or Carry Forward Rule	Amount Registered	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee
Equity	Common Stock, par value \$0.001						
	per share	457(c)	142,384(1)	\$ 4.32(2)	\$ 615,099(2)	.00014760	\$ 91
Total Offering Amounts					\$ 615,099		\$ 91
Net Fee Due							\$ 91

- (1) Pursuant to Rule 416 of the Securities Act, the securities registered hereunder include such indeterminate number of additional shares of Common Stock as may be issued after the date hereof as a result of stock splits, stock dividends or similar transactions.
- (2) Estimated solely for the purpose of calculating the registration fee in accordance with Rule 457(c) under the Securities Act of 1933, as amended (the “Securities Act”). The price per share and aggregate offering price are based on the average of the high (\$4.60) and low (\$4.03) prices of the Common Stock reported on the Nasdaq Stock Market on January 2, 2024.
-