

BOSTON BIOMEDICA, INC.

Up to 2,070,080 Shares of Common Stock

The shareholders named on page 14 are offering for sale up to 2,070,080 shares of our common stock under this prospectus.

Our common stock is traded on the Nasdaq National Market under the symbol "BBII." On December 7, 2000, the last reported sale price of our common stock was \$3.00 per share.

AN INVESTMENT IN THE COMMON STOCK OFFERED UNDER THIS PROSPECTUS INVOLVES A HIGH DEGREE OF RISK. SEE "RISK FACTORS" BEGINNING ON PAGE 4.

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 December 8, 2000

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SUMMARY

About Boston Biomedica

Boston Biomedica provides products and services for the detection and treatment of infectious diseases such as AIDS, Lyme Disease, and viral Hepatitis. We currently operate four business units:

- (1) BBI Diagnostics, a manufacturer and seller of quality control and diagnostic products that increase the accuracy of diagnostic tests that are performed IN VITRO, in a test tube or other laboratory equipment;
- (2) BBI Clinical Laboratories, a leading infectious disease testing laboratory that specializes in testing blood for the presence or absence of nucleic acids in pathogens, testing for tick borne diseases and follow-up testing for blood banks after an initial test shows questionable or positive results;
- (3) BBI Biotech Research Laboratories, our research and development arm, which provides research and development support for our other business units and contract research services and specimen storage services for other parties, including various agencies of the National Institutes of Health; and,
- (4) BBI Source Scientific, a manufacturer and seller of laboratory and medical instruments.

In addition, we are also conducting research in a technology that repeatedly applies and releases pressure on pathogens present in blood or plasma in an effort to destroy them, with the goal of introducing new solutions for

improving blood plasma safety, for improving specimen preparation in the testing of blood for the presence or absence of nucleic acids in pathogens and for improving the treatment of infectious diseases.

We were organized in Massachusetts in 1978 and commenced significant operations in 1986. Our principal executive offices are located at 375 West Street, West Bridgewater, Massachusetts 02379. Our telephone number is (508) 580-1900.

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RISK FACTORS

BEFORE YOU BUY SHARES OF OUR COMMON STOCK, YOU SHOULD BE AWARE THAT THERE ARE VARIOUS RISKS ASSOCIATED WITH THAT PURCHASE, INCLUDING THOSE DESCRIBED BELOW. YOU SHOULD CONSIDER CAREFULLY THESE RISK FACTORS, TOGETHER WITH ALL OF THE OTHER INFORMATION IN THIS PROSPECTUS AND THE DOCUMENTS WE HAVE INCORPORATED BY REFERENCE IN THE SECTION "WHERE YOU CAN FIND MORE INFORMATION" BEFORE YOU DECIDE TO PURCHASE SHARES OF OUR COMMON STOCK.

WE RELY ON PURCHASE ORDERS AND CONTRACTS FROM A SMALL NUMBER OF CUSTOMERS FOR A LARGE PORTION OF OUR REVENUES; THE LOSS OF BUSINESS FROM THESE CUSTOMERS COULD MATERIALLY REDUCE OUR REVENUES AND INCOME.

Purchase orders account for the majority of our orders; none of our customers have contractually committed to make future product purchases from us. In 1999, our three largest customers, Hoffman-La Roche, Inc., Medilabs, Inc. and Ortho-Diagnostics, Inc. together accounted for approximately 16% of our revenues. In addition, the various agencies of the National Institutes of Health, including the National Institutes of Allergies and Infectious Disease, the National Cancer Institute and the National Heart Lung and Blood Institute, in the aggregate accounted for approximately 15% of our revenues in 1999. Each agency within the National Institutes of Health, however, makes independent purchasing decisions. The loss of any major customer, including any agency within the National Institutes of Health, or a material reduction in any major customer's purchases would materially reduce our revenues and our operating results.

IF WE ARE UNABLE TO INCREASE OUR SALES OF QUALITY CONTROL PRODUCTS TO END-USERS OF INFECTIOUS DISEASE TEST KITS, THEN OUR FUTURE REVENUES COULD BE LESS THAN WE HAVE PROJECTED.

Currently, we sell most of our quality control products for infectious disease test kits to test kit manufacturers and regulators, which is a relatively small market. However, we also sell our quality control products to end-users of infectious disease test kits, including hospital laboratories, blood donor testing centers, public health laboratories and commercial laboratories. This end-user market is a larger market which has not yet become accustomed to using quality control products to monitor test results, but which we believe is a growing market. Currently, we expect an increase in both the frequency of use and the number of products used by our current end-user customers. However, these end-users of infectious

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disease test kits may not increase their use of our products. Further, large manufacturers and distributors of quality control products that have historically sold to the non-infectious disease market and that have greater financial, manufacturing and marketing resources than we have could begin selling their products to the end-users of infectious disease test kits. If the end-user market for quality control products for infectious disease testing does not develop further, or if we are unable to increase sales of our products to this market, our future revenues could be substantially less than we have projected.

IF OUR BBI BIOSEQ, INC. AND BBI SOURCE SCIENTIFIC, INC. SUBSIDIARIES CONTINUE TO HAVE SUBSTANTIAL OPERATING LOSSES, THEN WE MAY NOT BE ABLE TO REALIZE THE BOOK VALUE OF THEIR ASSETS.

Our BBI BioSeq subsidiary has incurred operating losses of approximately \$2,160,000, since its acquisition in September 1998, through September 30, 2000. This subsidiary may not be successful in developing its in-process technology, and its technology may never achieve commercial

viability. If we cannot successfully commercially develop its technology, our BBI BioSeq subsidiary may never become profitable and we may need to write off some or all of the current net book value of its intangible assets related to its patents, which was approximately \$681,000 as of September 30, 2000.

As a result of our July 1997 acquisition of Source Scientific, Inc., we recorded approximately \$2,200,000 of goodwill. Since this acquisition, our BBI Source Scientific subsidiary has incurred cumulative operating losses of approximately \$2,975,000, not including the write down of goodwill, as of September 30, 2000. As of September 30, 2000, the net book value of goodwill from the BBI Source Scientific acquisition of approximately \$1,718,000 was written down by approximately \$1,464,000 to a balance of \$254,000. That subsidiary may continue to have operating losses and may never become profitable. If operating losses continue, some or all of the remaining goodwill associated with BBI Source Scientific may be written down or written off entirely.

IF WE ARE UNABLE TO OBTAIN BOTH THE NECESSARY REGULATORY APPROVALS AND SUBSTANTIAL FUNDS FOR OUR BBI BIOSEQ SUBSIDIARY'S PRODUCTS, OUR FUTURE REVENUES AND INCOME WILL BE LESS THAN WE HAVE PROJECTED.

Our BBI BioSeq subsidiary is currently developing products that will require significant additional development, preclinical and clinical testing regulatory approvals and investment of substantial funds prior to their commercialization. Our BBI BioSeq subsidiary is developing laboratory instruments that will use pressure cycling technology, a technology that repeatedly applies and releases pressure on

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pathogens present in blood or plasma in an effort to destroy them. Our BBI BioSeq subsidiary is also developing its pressure cycling process to refine an existing laboratory instrument prototype. Both the development of the laboratory instruments and the pressure cycling process will require substantial capital and development activities to ready the existing prototype for commercial use. The process of obtaining required regulatory approvals can be costly and time-consuming, and we may not be able to successfully develop our future products, prove them to be safe and effective in clinical trials or receive applicable regulatory approvals. If we are not able to obtain substantial funds, develop adequate technology and receive regulatory approvals for products being developed by our BBI BioSeq subsidiary, our future revenues and income will be less than we have projected.

IF THE FDA REQUIRES CLEARANCE OR APPROVAL FOR EITHER OUR PRODUCTS THAT ARE DESIGNATED ONLY FOR RESEARCH AND NOT FOR DIAGNOSTIC PROCEDURES OR OUR PRODUCTS THAT WE BELIEVE ARE EXEMPT FROM FDA CLEARANCE AND INITIATES ENFORCEMENT ACTION FOR OUR FAILURE TO DO SO, WE WILL LIKELY EXPEND SIGNIFICANT RESOURCES TO RESOLVE THE MATTER.

In the United States, the Food, Drug, and Cosmetic Act prohibits the marketing of most IN VITRO diagnostic products until the Food and Drug Administration either clears or approves the products through processes that are time-consuming, expensive and uncertain. Some IN VITRO diagnostic products may be exempt from FDA clearance or approval if they have undergone validation studies. As of July 31, 2000, 31 of our Accurun 1(R) and Accurun(R) products had received FDA clearance, and we believe that 17 are exempt from FDA clearance. During 1999, our Accurun(R) products accounted for approximately 11.55% of our revenue. Although it has not done so in the past, the FDA may not agree that some of these products are entitled to an exemption and may adopt a different interpretation of the Food, Drug, and Cosmetic Act or other laws it administers. We believe that products which are used only for research and not in diagnostic procedures are not subject to FDA clearance or approval. We currently label some of our products "for research use only" because they are not intended for use in diagnostic procedures, and have not been cleared or approved by the FDA. It is possible, however, that some purchasers of these products may use them for diagnostic purposes rather than for research, despite our labeling. Under any of these circumstances, the FDA could allege that some or all of these products should have been cleared or approved, or otherwise validated prior to marketing, and could initiate enforcement action against us. If the FDA initiates enforcement action against us, we will likely expend a large amount of time, money, resources and management attention to resolve the matter. In addition, if we cannot obtain or are delayed

in obtaining FDA clearances or approvals for our products, we may encounter delays or be unable to ever sell those products.

IF WE FAIL TO COMPLY WITH GOOD MANUFACTURING PRACTICES IN CONNECTION WITH THE MANUFACTURE OF OUR MEDICAL DEVICE PRODUCTS, WE MAY NOT BE ABLE TO DISTRIBUTE OUR PRODUCTS AND MAY NOT GENERATE PRODUCT REVENUES.

We are also subject to strict FDA good manufacturing practice regulations which govern testing, control and documentation practices, and other post-marketing restrictions on the manufacture of our medical device products. Our IN VITRO diagnostic products and our laboratory instrumentation products are considered "medical device products," as defined by the FDA. Regulatory authorities monitor our ongoing compliance with good manufacturing practices and other applicable regulatory requirements through periodic inspections. If we fail to comply with good manufacturing practices or other regulatory requirements, we may not be able to obtain future pre-market clearances or approvals, or the FDA or other regulatory agencies may impose corrective action requirements, including total or partial suspension of product distribution, injunctions, civil penalties, recall or seizure of products, and criminal prosecution. Any of these events would lead to increased costs and a drain on resources and could reduce our revenues and operating results.

BECAUSE WE CONDUCT OUR BUSINESS WORLDWIDE, CHANGES IN INTERNATIONAL REGULATORY REQUIREMENTS MAY MATERIALLY REDUCE OUR TOTAL REVENUES.

Our international sales accounted for approximately 13.7% of our total revenues for the year ended December 31, 1999. Several Accurun(R) products are subject to international regulatory approvals in Germany and France. These approval processes are similar to the FDA clearance process. Changes in international regulatory requirements and policies, including both changes in existing restrictions and future restrictions on importation of blood and blood derivatives, could result in reduced international sales, which may materially reduce our total revenues and income.

IF WE ARE UNABLE TO OBTAIN A STEADY AND ADEQUATE SUPPLY OF RARE SPECIMENS OF PLASMA AND SERUM, THEN WE MAY BE UNABLE TO PRODUCE OUR QUALITY CONTROL PANEL PRODUCTS AND OUR ACCURUN(R) RUN CONTROLS PRODUCTS.

We manufacture our diagnostic products, including our quality control panel products and Accurun(R) run controls products, from human plasma and serum which we obtain from nonprofit and commercial blood centers in the United States and from similar sources throughout the world. Our BBI Diagnostics business unit, which manufactures and sells these diagnostic products, accounts for approximately 40% of our revenues. Our quality control panel products and Accurun(R) run control products contain unique and rare plasma specimens that we collect from individuals who have been infected with particular diseases. The specimens are unique and rare because we can collect them only during the brief period of time when the markers for a particular disease in an infected individual are converting from negative to positive. It is difficult to identify such infected individuals and to collect specimens from them during the brief period of time when the markers for a particular disease are converting from negative to positive. As a result, quantities of these specimens are limited. As we sell our quality control panel products and run control products, we must find replacement specimens that are equally unique and rare. We may also face competition to obtain these specimens which could further limit our ability to obtain the specimens and to produce certain of our quality control panel products and run control products. A limit in our ability to produce our products would reduce our future revenues and operating results.

IF WE ARE NOT ABLE TO REACT QUICKLY TO TECHNOLOGICAL CHANGE, WE MAY NOT BE ABLE TO COMPETE EFFECTIVELY.

The infectious disease test kit industry is characterized by rapid and significant technological change, and changes in customer requirements. As a result, our ability to continue to compete effectively in this industry depends upon our ability to enhance our existing products and to develop or acquire, and introduce in a timely manner, new products that take advantage of technological advances and respond to customer requirements. We may not be successful in developing and marketing such new products or enhancements to our existing

products on a timely basis, if at all, and such products may not adequately address the changing needs of the marketplace. Furthermore, rapid technological development may result in our products or services becoming obsolete or noncompetitive before we recover our investment in research, development and commercialization.

IF WE CANNOT PROTECT OUR INTELLECTUAL PROPERTY, WE MAY BE UNABLE TO COMPETE EFFECTIVELY.

Our ability to compete effectively with other companies depends in part on our ability to maintain the proprietary nature of our technologies and products. We rely primarily on a combination of trade

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secrets and non-disclosure and confidentiality agreements to establish and protect our proprietary rights in our technology and products. We have 15 patents pending related to the pressure cycling technology that our BBI BioSeq subsidiary is developing. If we have not adequately protected our technology, or if our competitors misappropriate our intellectual property, we could lose market share and our future revenues and operating income could be significantly less than projected.

IF WE ARE UNABLE TO ATTRACT AND RETAIN HIGHLY QUALIFIED SCIENTIFIC AND MANAGEMENT PERSONNEL, THEN WE MAY NOT BE ABLE TO DEVELOP AND REFINE OUR PRODUCTS AND SERVICES.

Our products and services are highly technical and our key personnel must have specialized training or advanced degrees in order to develop and refine these products and services. There are a limited number of qualified scientific and management personnel who possess the technical background necessary to adequately understand and improve our products and services. We compete for these personnel with other companies, academic institutions, government entities and other organizations engaged in research and development of quality control products. If we are unable to attract and retain scientific and management personnel with the appropriate credentials who are capable of developing and refining our products and services, then our products and services could become inaccurate or unreliable, or could fail to obtain FDA approval and we may be unable to deliver new products.

PENDING LITIGATION COULD RESULT IN SUBSTANTIAL COSTS AND MAY DIVERT MANAGEMENT'S ATTENTION AND RESOURCES.

On August 18, 2000, we received a summons and complaint from Paradigm Group, LLC, naming us as a defendant. The suit, filed in the Circuit Court of Cook County, Illinois, alleges breach of contract claims and fraud against us in connection with the sale by us to them of warrants to purchase our shares of common stock, the exercise of those warrants by Paradigm Group, LLC, and a delay in the registration of those shares. Paradigm Group, LLC, seeks several remedies, including \$3 million in damages or unspecified monetary damages, return of the \$42,500 purchase price for the warrants and rescission of its exercise of the warrants, and unspecified punitive damages. We have announced that we intend to vigorously defend this matter. This lawsuit could result in substantial costs and may divert management's attention and resources. Any adverse determination in this case could also subject us to significant liabilities.

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INSIDERS CONTROL A SIGNIFICANT PERCENTAGE OF VOTING POWER AND MAY EXERCISE THEIR VOTING POWER IN A MANNER ADVERSE TO OTHER SHAREHOLDERS' INTERESTS.

Our chief executive officer, Richard T. Schumacher, his relatives, and our other existing officers and directors collectively have voting control over approximately 35% of the outstanding shares of our common stock. Accordingly, these shareholders, should they choose to act in concert, are in a position to exercise a significant degree of control and to significantly influence shareholder votes on the election of directors, increasing the authorized capital stock, and authorizing mergers and sales of assets. These shareholders may act in a manner that is adverse to your personal interests.

PROVISIONS IN OUR CHARTER AND BY-LAWS MAY DISCOURAGE OR FRUSTRATE SHAREHOLDERS' ATTEMPTS TO REMOVE OR REPLACE OUR CURRENT MANAGEMENT.

Our amended and restated articles of organization and restated bylaws contain provisions that may make more difficult or discourage changes in our management that our shareholders may consider to be favorable. These provisions include:

- - a classified board of directors;
- - advance notice to the board of directors of shareholder proposals and shareholder nominees for the board of directors;
- - limitations on the ability of shareholders to remove directors and call shareholders meetings; and
- - a provision that allows a majority of the directors to fill vacancies on the board of directors.

These provisions could prevent or frustrate shareholders' attempts to make changes in our management that our shareholders consider to be beneficial.

THE CONVERSION OF OUR OUTSTANDING 3% SENIOR SUBORDINATED CONVERTIBLE DEBENTURES AND/OR THE EXERCISE OF OUTSTANDING WARRANTS TO PURCHASE OUR COMMON STOCK WILL HAVE A DILUTIVE IMPACT ON OUR SECURITY HOLDERS AND MAY PLACE DOWNWARD PRESSURE ON THE PRICE OF OUR COMMON STOCK.

The number of shares of common stock that may ultimately be issued upon conversion of the outstanding debentures is presently undeterminable because the conversion price of the debentures is the

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lower of: (i) \$3.36 a share or (ii) 90% of the average of the five (5) lowest volume weighted average sales prices of our common stock as reported by Bloomberg, L.P. during the 25 business days immediately preceding the date on which any debenture holder notifies us that it will convert all or a part of their debenture into common stock. Assuming a conversion price of \$3.36 a share, conversion of all our outstanding debentures would result in the issuance of 967,262 shares of common stock. This represents about 17.2% of our outstanding common stock based on the number of shares outstanding as of September 19, 2000. In addition, the number of shares issuable upon conversion of the debentures will increase if the price of our common stock drops below \$3.36 a share. For example, if the average of the five (5) lowest volume weighted average sales prices of our common stock as reported by Bloomberg, L.P. during the 25 business days immediately preceding the date on which any debenture holder elects to convert all or a part of their debenture into common stock is equal to \$2.00 a share, and assuming all the debentures were converted, we would issue approximately 1,625,000 shares of our common stock, which represents approximately 28.8% of our issued and outstanding common stock based on the number of shares outstanding as of September 19, 2000. A downward spiral in the price of our common stock could result in the loss of a significant portion of your investment, and the conversion of our outstanding debentures could place downward pressure on the price of our common stock. The terms of the debenture entitle us to redeem any of the outstanding debenture(s) at a redemption price equal to (x) the number of shares of common stock into which said debenture(s) is then convertible times (y) the average closing bid price as reported by Bloomberg L.P. for the five (5) trading days immediately prior to the date that the debenture(s) is called for redemption, plus accrued and unpaid interest. We may not have sufficient funds to redeem the debentures at such time as we determine it is most appropriate to redeem the debenture(s).

In addition, we have outstanding warrants, with various strike prices, which are exercisable for a total of 494,709 shares of our common stock (warrants for 135,556 of which were issued to the selling shareholders named on page 14). This represents approximately 8.8% of our issued and outstanding common stock based on the number of shares issued and outstanding as of September 19, 2000. The exercise of our outstanding warrants could place downward pressure on the price of our common stock.

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WARNINGS REGARDING FORWARD-LOOKING STATEMENTS

Some of the statements contained in this prospectus under "Summary" and

"Risk Factors," and in the documents incorporated by reference, are forward-looking statements made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. In essence, forward-looking statements are predictions of future events. Although we would not make forward-looking statements unless we believe we have a reasonable basis for doing so, we cannot guarantee their accuracy, and actual results may differ materially from those we anticipated due to a number of uncertainties, many of which we are not aware. We urge you to consider the risks and uncertainties discussed under "Risk Factors" and in the other documents filed with the SEC that we have referred you to in evaluating our forward-looking statements.

You should also understand that we have no plans to update our forward-looking statements. Our forward-looking statements speak only as of the date of this prospectus, or in the case of forward-looking statements in documents incorporated by reference, as of the date of those documents.

We generally identify forward-looking statements with the words "plan," "expect," "anticipate," "believe," "intend," "estimate," "continue," "will," "may," "should" and similar expressions. Examples of our forward-looking statements may include statements related to:

- our plans, objectives, expectations and intentions;
- the timing, availability, cost of development and functionality of products under development or recently introduced; and
- the anticipated markets for our products and the success of our products in those markets.

USE OF PROCEEDS

The selling shareholders are selling all of the shares covered by this prospectus for their own account. Accordingly, we will not receive any proceeds from the resale of the shares.

The 2,070,080 shares of our common stock that we are registering under this prospectus include shares that may be issued to selling shareholders upon the conversion of our outstanding stock purchase warrants and shares that may be issued upon the conversion of our outstanding debentures and upon the exercise of our outstanding stock purchase warrants.

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The common stock offered by this prospectus is the common stock issuable upon conversion of our outstanding debentures and upon exercise of the warrants issued in an August 25, 2000 private placement. GCA Strategic Investment Fund Limited purchased its 3% senior subordinated convertible \$2,250,000 debenture and 80,000 warrants to purchase our common stock pursuant to a Securities Purchase Agreement with us, dated as of August 25, 2000. The total purchase price for the debenture was \$2,137,500. No additional consideration was paid to us for the warrant issued to GCA. DP Securities, Inc. and Wharton Capital Partners, Ltd. received stock purchase warrants as a fee for services rendered in connection with the private placement to GCA. Each of DP Securities and Wharton Capital may exercise warrants to purchase 10,000 shares of our common stock at an exercise price of \$3.60 per share. Richard T. Kiphart purchased a \$780,000 3% senior subordinated convertible debenture and warrants to purchase 27,734 shares of common stock. Shoreline Micro-Cap Fund, L.P. purchased a \$220,000 senior subordinated convertible debenture and warrants to purchase 7,822 shares of common stock. Each of Mr. Kiphart and Shoreline obtained their debentures and warrants pursuant to a Securities Purchase Agreement with us dated as of August 25, 2000. Mr. Kiphart paid \$741,000 to obtain his debenture, and Shoreline paid \$209,000 to obtain its debenture. Mr. Kiphart and Shoreline did not pay any additional consideration for their warrants.

We will use the proceeds which we have received from the sale of the debentures for completion of our West Bridgewater, MA manufacturing facility, to fund pressure cycling technology research and development and for general corporate and working capital purposes. Any proceeds we receive from the exercise of the warrants will be used for working capital purposes.

We prepared this prospectus to satisfy our obligations to the selling shareholders to register their shares pursuant to a Registration Rights

Agreement which we entered into with GCA, DP Securities and Wharton Capital on August 25, 2000, and a Registration Rights Agreement which we entered into with Mr. Kiphart and Shoreline on August 25, 2000. We will bear the expenses relating to this registration, other than selling discounts and commissions, which will be paid by the selling shareholders.

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SELLING SHAREHOLDERS

The selling shareholders named below are offering for sale up to 2,070,080 shares of our common stock under this prospectus. We will not receive any proceeds from those sales. The 2,070,080 shares of our common stock that we are registering under this prospectus includes shares that may be issued to the selling shareholders upon the conversion of our outstanding debentures and the exercise of our outstanding stock purchase warrants.

The following table sets forth information regarding the beneficial ownership of our common stock by the selling shareholders as of November 15, 2000 and is adjusted to reflect the sale or transfer by the selling shareholders of the shares of our common stock being registered under this prospectus, including the sale or transfer of shares of our common stock underlying the debentures and the warrants held by selling shareholders. This information is based upon information received from or on behalf of the selling shareholders. The number of shares beneficially owned by Richard T. Kiphart, Shoreline Micro-Cap Fund, L.P. and GCA Strategic Investment Fund Limited is estimated assuming a conversion price of \$3.36 for the debentures held by these selling shareholders. The conversion price of the debentures held by these selling shareholders will be the lesser of (i) \$3.36 a share or (ii) 90% of the average of the five (5) lowest volume weighted average sales prices of our common stock as reported by Bloomberg, L.P. during the 25 business days immediately preceding the date on which a selling shareholder holding a debenture notifies us that it will convert all or part of its debenture into common stock. We have chosen to register approximately 200% of the number of shares we estimate to be currently issuable upon conversion of the debentures so that a sufficient number of shares is registered in the event that the conversion price of the debentures declines below \$3.36 a share.

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NAME OF SECURITYHOLDER	TOTAL SHARES BENEFICIALLY OWNED PRIOR TO OFFERING		SHARES NUMBER OF BEING OFFERED		BENEFICIALLY OWNED AFTER OFFERING	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
GCA Strategic Investment Fund Limited.(1)	749,643	11.73%	749,643		0	*
DP Securities, Inc. (2)	10,000	*	10,000	0	*	
Wharton Capital Partners, Ltd. (2)	10,000	*	10,000	0	*	
Richard P. Kiphart (3)	259,877	4.4%*	259,877	0	*	
Shoreline Micro-Cap Fund, L.P. (4)	73,298	1.28%	73,298	0	*	

* Less than 1%.

(1) Consists of an estimated 669,643 shares of our common stock issuable upon the conversion of our debenture and 80,000 shares of common stock issuable pursuant to the exercise of warrants. The number of shares issuable upon conversion of the debenture was calculated based on a conversion price of \$3.36.

(2) Consists of warrants to purchase an aggregate of 10,000 shares of our common stock.

(3) Consists of an estimated 232,143 shares of our common stock issuable upon the conversion of our debenture and 27,734 shares of our common stock issuable pursuant to the exercise of warrants. The number of shares issuable upon conversion of the debenture was calculated based on a conversion price of \$3.36.

(4) Consists of an estimated 65,476 shares of our common stock issuable upon the conversion of our debenture and 7,822 shares of our common stock issuable pursuant to the exercise of warrants. The number of shares issuable upon conversion of the debenture was calculated based on a conversion price of \$3.36.

PLAN OF DISTRIBUTION

The selling shareholders and their pledgees, donees, transferees and other non-sale transferees may offer their shares at various times in one or more of the following transactions:

- in the Nasdaq National Market;
- in the over-the-counter market; or
- in privately negotiated transactions

at prevailing market prices at the time of sale, at prices related to those prevailing market prices, at negotiated prices or at fixed prices.

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The selling shareholders may also sell the shares under Rule 144 instead of under this prospectus, if Rule 144 is available for those sales.

We will not receive any proceeds from the sale of our common stock by the selling shareholders.

The transactions in the shares covered by this prospectus may be carried out by one or more of the following methods:

- ordinary brokerage transactions and transactions in which the broker solicits purchasers;
- purchases by a broker or dealer as principal, and the resale by that broker or dealer for its account as part of the distribution under this prospectus, including resale to another broker or dealer;
- block trades in which the broker or dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal in order to facilitate the transaction;
or
- negotiated transactions between selling shareholders and purchasers, with or without a broker or dealer.

As of the date of this prospectus, we are not aware of any agreement, arrangement or understanding between any broker or dealer and any of the selling shareholders with respect to the offer or sale of the shares under this prospectus.

We have advised the selling shareholders that, during the time each is engaged in distributing shares covered by this prospectus, each must comply with the requirements of the Securities Act and the Exchange Act, including Rule 10b-5 and Regulation M. Under those rules and regulations, they:

- may not engage in any stabilization activity in connection with our securities;
- must furnish each broker that offers common stock covered by this prospectus with the number of copies of this prospectus that are required by each broker; and
- may not bid for or purchase any of our securities or attempt to induce any person to purchase any of our securities other than as permitted under the Exchange Act.

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We have agreed to indemnify and hold harmless each selling shareholder against liabilities under the Securities Act, which may be based upon, among other things, any untrue statement or alleged untrue statement of a material

fact or any omission or alleged omission of a material fact, unless made or omitted in reliance upon written information provided to us by that selling shareholder for use in this prospectus. We have agreed to bear the expenses incident to the registration of the shares, other than selling discounts and commissions.

INDEMNIFICATION FOR SECURITIES ACT LIABILITIES

Our Amended and Restated Articles of Organization eliminate, subject to certain exceptions, the personal liability of our directors for monetary damages for breaches of fiduciary duties as directors. Our Amended and Restated Articles do not provide for the elimination of, or any limitation on, the personal liability of a director for (i) any breach of the director's duty of loyalty to Boston Biomedica and our shareholders; (ii) acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law; (iii) certain unauthorized dividends, redemptions or distributions as provided under Section 61 of the Massachusetts Business Corporation Law; (iv) certain loans of company assets to any of our officers or directors as provided under Section 62 of the Massachusetts Business Corporation Law; or (v) any transaction from which the director derived an improper personal benefit. This provision of our Amended and Restated Articles of Organization will limit the remedies available to you in the event of breaches of any director's duties to Boston Biomedica and our shareholders. Our Amended and Restated Articles of Organization provide that we may, either in our by-laws or by contract, provide for the indemnification of directors, officers, employees and agents, by whomever elected or appointed, to the full extent permitted by law.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to our directors, officers or controlling persons pursuant to the foregoing provisions, or otherwise, we have been informed that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable.

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LEGAL MATTERS

For the purpose of this offering, Brown, Rudnick, Freed & Gesmer, Boston, Massachusetts, will pass upon the validity of the shares of common stock covered under this prospectus.

EXPERTS

The financial statements incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 1999 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, independent accountants, given on the authority of said firm as experts in auditing and accounting. The valuation information incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 1999 has been so incorporated in reliance on the valuation report of The Michel/Shaked Group, a division of Back Bay Management Corporation, given on the authority of said firm as experts in asset valuation.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and special reports, proxy statements and other information with the SEC. You may read and copy any document we file at the SEC's public reference rooms at 450 Fifth Street, N.W., Washington, D.C., 20549, in Chicago, Illinois and in New York, New York. Please call the SEC at 1-800-SEC-0330 for further information on the public reference rooms. Our SEC filings are also available to the public over the Internet on the SEC's website at <http://www.sec.gov>.

We have filed with the SEC a registration statement on Form S-3 under the Securities Act of 1933, as amended, with respect to the common stock offered in connection with this prospectus. This prospectus does not contain all of the information set forth in the registration statement. We have omitted parts of the registration statement in accordance with the rules and regulations of the SEC. For further information with respect to us and our common stock, you should refer to the registration statement and to the exhibits and schedules filed as part of the registration statement, as well as the documents discussed below. Statements contained in this prospectus as to the contents of any contract or

other document are not necessarily complete and, in each instance, you should refer to the copy of the contract or document filed as an exhibit to or incorporated by reference in the registration statement. Each statement as to the

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contents of any contract or document is qualified in all respects by reference to the contract or document itself. You may obtain copies of the registration statement from the SEC's principal office in Washington, D.C. upon payment of the fees prescribed by the SEC, or you may examine the registration statement without charge at the offices of the SEC described above.

The SEC allows us to "incorporate by reference" the information that we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be 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 following documents:

- Our Annual Report on Form 10-K for the fiscal year ended December 31, 1999, as amended;
- Our Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2000, as amended;
- Our Quarterly Report on Form 10-Q for the fiscal quarter ended June 30, 2000, as amended;
- Our Quarterly Report on Form 10-Q for the fiscal quarter ended September 30, 2000, as amended;
- Our Definitive Proxy Statement as Schedule 14A and proxy materials filed on May 1, 2000;
- Our Current Report on Form 8-K filed on September 8, 2000; and
- The description of our common stock contained in our registration statement on Form 8-A dated October 25, 1996.

We also incorporate by reference any future filings made with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, prior to the termination of the offering to which this prospectus relates.

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

Boston Biomedica, Inc.
375 West Street
West Bridgewater, MA 02379
(508) 580-1900
Attn: Investor Relations

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THIS PROSPECTUS IS PART OF A REGISTRATION STATEMENT WE FILED WITH THE SEC. YOU SHOULD RELY ONLY ON THE INFORMATION OR REPRESENTATIONS PROVIDED IN THIS PROSPECTUS. WE HAVE NOT AUTHORIZED ANYONE TO PROVIDE YOU WITH ANY INFORMATION THAT IS NOT CONTAINED IN THIS PROSPECTUS. THE SELLING SHAREHOLDERS DESCRIBED IN THIS PROSPECTUS ARE NOT MAKING AN OFFER TO SELL OR SOLICITING AN OFFER TO BUY ANY SHARES IN ANY JURISDICTION WHERE THE OFFER OR SALE IS NOT PERMITTED. YOU SHOULD NOT ASSUME THAT THE INFORMATION IN THIS PROSPECTUS IS ACCURATE AS OF ANY DATE OTHER THAN THE DATE OF THIS PROSPECTUS.

BOSTON BIOMEDICA, INC.

Up to 2,070,080 Shares of Common Stock

PROSPECTUS

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