AS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION ON SEPTEMBER 1, 2000

REGISTRATION NO. 333-94379

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SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

PRE-EFFECTIVE AMENDMENT NO. 2
TO
FORM S-3
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

BOSTON BIOMEDICA, INC.
(Exact Name of Registrant as Specified in Its Charter)

MASSACHUSETTS	04-2652826
(STATE OR OTHER JURISDICTION OF INCORPORATION OR ORGANIZATION)	(IRS EMPLOYER IDENTIFICATION NUMBER)

375 WEST STREET
WEST BRIDGEWATER, MASSACHUSETTS 02379
(508) 580-1900
(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive Offices)

RICHARD T. SCHUMACHER
BOSTON BIOMEDICA, INC.
375 WEST STREET
WEST BRIDGEWATER, MA 02379
(508) 580-1900
(Name, Address, Including Zip Code, and Telephone Number, Including Area Code, of Agent for Service)

COPIES TO:
STEVEN R. LONDON, ESQUIRE
BROWN, RUDNICK, FREED & GESMER
ONE FINANCIAL CENTER
BOSTON, MASSACHUSETTS 02111
TEL: (617) 856-8200
FAX: (617) 856-8201

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 Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box. [X]

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 delivery of the prospectus is expected to be made pursuant to Rule 434, please check the following box.[ ]

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 COMMISSION, ACTING PURSUANT TO SAID SECTION 8(a), MAY DETERMINE.

PROSPECTUS (SUBJECT TO COMPLETION)

THE INFORMATION IN THIS PROSPECTUS IS NOT COMPLETE AND MAY BE CHANGED. WE HAVE FILED A REGISTRATION STATEMENT RELATING TO THE COMMON STOCK WITH THE UNITED STATES SECURITIES AND EXCHANGE COMMISSION. WE MAY NOT SELL THE COMMON STOCK UNTIL THE SEC DECLARES THAT THE REGISTRATION STATEMENT IS EFFECTIVE. THIS PROSPECTUS IS NOT AN OFFER TO SELL THE COMMON STOCK AND IT IS NOT SOLICITING AN OFFER TO BUY THE COMMON STOCK IN ANY STATE WHERE THE OFFER OR SALE IS NOT PERMITTED.

BOSTON BIOMEDICA, INC.

Up to 633,306 Shares of Common Stock

The shareholders named on page 13 are offering for sale up to 633,306 shares of our common stock under this prospectus.

Our common stock is traded on the Nasdaq National Market under the symbol "BBII." On August 31, 2000, the last reported sale price of our common stock was $4.00 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 _____, 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 conducting research to discover new drugs, primarily in the AIDS field, from synthetic derivatives of natural plant compounds. 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.

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

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 $2,449,000, as of June 30, 2000. That subsidiary may continue to have operating losses and may never become profitable. As of June 30, 2000, the net book value of goodwill from the BBI Source Scientific acquisition was approximately $1,755,000, which represented 6.4% of our total assets on that date. This amount may become impaired to the extent that expected future operating profits fall below the current net book value of this goodwill. If BBI Source Scientific continues to have losses, we may not be able to realize the net book value of this goodwill.

Our BBI BioSeq subsidiary has incurred operating losses of approximately $1,898,000, since its acquisition in September 1998, through June 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.

Because these subsidiaries have incurred significant operating losses, we have also reported operating losses in our consolidated results. If we continue to incur losses on a consolidated basis, we may be unable to realize some or all of our deferred and current tax assets; and if we determine that some or all of these tax assets are not realizable we will incur a charge to earnings and write down the asset to its expected realizable value.

IF WE ARE UNABLE TO OBTAIN BOTH THE NECESSARY REGULATORY APPROVALS AND SUBSTANTIAL FUNDS FOR OUR SUBSIDIARIES' PRODUCTS, OUR FUTURE REVENUES AND INCOME

WILL BE LESS THAN WE HAVE PROJECTED.

Our BBI BioSeq and Panacos Pharmaceuticals subsidiaries are 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 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. Our Panacos Pharmaceuticals subsidiary is conducting research relating to compounds, pharmaceutical compositions, therapeutic methods and vaccine preparations, primarily in the HIV field, and will require substantial capital to progress to more advanced stages of drug development, including human clinical trials. 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 and Panacos Pharmaceuticals subsidiaries, our future revenues and income will be less than we have projected.

IF THE FDA REQUIRES CLEARANCE OR APPROVAL FOR CERTAIN OF OUR PRODUCTS 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. Various 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 certain countries (including 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 SOME OF 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. Certain of 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 secrets and non-disclosure and confidentiality agreements to establish and protect our proprietary rights in our technology and products. In addition, we have obtained five patents that we hold jointly with the University of North Carolina at Chapel Hill relating to compounds, pharmaceutical compositions and therapeutic methods in connection with our drug discovery program at the University of North Carolina at Chapel Hill. We also 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. Paradigm Group, LLC is a selling shareholder in this registration statement. 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 in this registration statement. 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.

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.

ANTI-TAKEOVER PROVISIONS IN OUR CHARTER AND BY-LAWS MAY DISCOURAGE THIRD PARTIES FROM PURSUING A TAKEOVER.

Our amended and restated articles of organization and restated bylaws contain provisions that may make an acquisition of us more difficult and discourage changes in our management. These provisions could limit the price that investors might be willing to pay in the future for shares of our common stock. 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;
- a provision that allows a majority of the directors to fill vacancies on the board of directors; and
- the ability of the board of directors to issue, without further shareholder approval, preferred stock with rights and privileges that could be senior to the common stock.

We are also subject to the Massachusetts General Laws which, subject to certain exceptions, prohibit a Massachusetts corporation from engaging in any of a broad range of business combinations with any "interested shareholder" for a period of three years following the date that shareholder became an interested shareholder. These provisions could discourage a third party from pursuing a takeover at a price considered attractive by many shareholders and could have the effect of preventing or delaying a potential acquirer from acquiring control.

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.

However, the 633,306 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 outstanding stock purchase warrants.

Paradigm Group, L.L.C. obtained its shares upon the exercise of stock purchase warrants that it received in connection with its investment in Boston Biomedica. The total purchase price for the warrants was $50,000. David Kavrell, Brian Friedman, Craig Gould, Steven Rothstein and Robert Daskal obtained their shares upon the exercise of stock purchase warrants that they received by transfer from Paradigm Group. These shareholders and Paradigm Group have agreed to pay us a total of $2,225,000, as payment of the aggregate exercise price of their warrants, on the business day after the SEC declares our registration statement relating to these shares effective.

National Securities received stock purchase warrants as a fee for services rendered in connection with Paradigm Group's investment in Boston Biomedica. National Securities may exercise warrants to purchase up to 40,000 shares of our common stock at an exercise price of $4.25 per share and warrants to purchase up to 25,000 shares of our common stock at an exercise price of $8.00 per share in connection with Paradigm Group's exercise of its warrants. This transaction is the subject of the litigation described under "Risk Factors" beginning on page 4. In addition, National Securities may exercise warrants to purchase up to 10,000 shares of our common stock at an exercise price of $5.25 per share. National Securities' warrants expire on August 15, 2001.

MdBio, Inc., received 29,153 stock units in connection with its award of $175,000 to Boston Biomedica under a manufacturing incentive program that MdBio instituted. Each stock unit consists of one share of our common stock and a warrant to purchase one additional share of our common stock at an exercise price of $10.00 per share. MdBio's warrants expire on September 29, 2003.

We will use any proceeds which we will receive from the exercise of these stock purchase warrants for working capital purposes.

We prepared this prospectus to satisfy our obligations to the selling shareholders to register their shares. We will bear the expenses relating to this registration, other than selling discounts and commissions, which will be paid by the selling shareholders.

SELLING SHAREHOLDERS

The selling shareholders named below are offering for sale up to 633,306 shares of our common stock under this prospectus. We will not receive any proceeds from those sales. The 633,306 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 outstanding stock purchase warrants.

The following table sets forth information regarding the beneficial ownership of our common stock by the selling shareholders as of August 31, 2000 and as 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 warrants held by selling shareholders. This information is based upon information received from or on behalf of the selling shareholders.

<TABLE>
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	SHARES BENEFICIALLY	NUMBER OF	SHARES BENEFICIALLY

NAME OF SECURITYHOLDER	OWNED PRIOR TO OFFERING NUMBER	PERCENT	SHARES BEING OFFERED NUMBER	OWNED AFTER OFFERING NUMBER	PERCENT
<S>	<C>	<C>	<C>	<C>	
Paradigm Group, L.L.C.(1)	425,000	7.76%	425,000	0	*
David Kavrell	15,000	*	15,000	0	*
Brian Friedman	10,000	*	10,000	0	*
Craig Gould	20,000	*	20,000	0	*
Steven Rothstein	20,000	*	20,000	0	*
Robert Daskal	10,000	*	10,000	0	*
National Securities	75,000 (2)	1.37%	75,000	0	*
MdBio, Inc.	58,306 (3)	1.06%	58,306	0	*

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* Less than 1%.

(1) Paradigm Group, L.L.C. is controlled by Sheldon Drobny.

(2) Consists of warrants to purchase an aggregate of 75,000 shares of our common stock.

(3) Consists of stock units comprised of 29,153 shares of our common stock and warrants to purchase an additional 29,153 shares of our common stock.

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.

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.

Under the terms of each of the warrants, 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 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.

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.

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 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;
- Our Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2000;
- Our Quarterly Report on Form 10-Q for the fiscal quarter ended June 30, 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

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.

TABLE OF CONTENTS

BOSTON BIOMEDICA, INC.

Up to 633,306 Shares of Common Stock

PROSPECTUS
(Subject to Completion)

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

ITEM 14. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION

The following table sets forth the various expenses payable by us in connection with the sale and distribution of the securities registered hereby. All amounts are estimated except the SEC and Nasdaq fees. We will bear all of the costs of issuance and distribution as follows:

<TABLE>

<S>	<C>
SEC Registration Fee.....	$ 481
Nasdaq Filing Fee.....	$ 17,500
Accounting Fees and Expenses.....	$ 35,000
Legal Fees and Expenses.....	$ 50,000
Costs of Printing and Engraving	$ 1,000
Miscellaneous.....	$ 519
Total.....	$104,5000

</TABLE>

ITEM 15. INDEMNIFICATION OF DIRECTORS AND OFFICERS

Our amended and restated by-laws include provisions to permit the indemnification of our officers and directors for damages arising out of the performance of their duties unless such damages arise out of the officer's or director's failure to exercise his duties and to discharge the duties of his office in good faith and in the reasonable belief that his action was in, or not opposed to, the best interest of Boston Biomedica, and with respect to any criminal action or proceeding, do not have reasonable cause to believe that his conduct was unlawful.

ITEM 16. EXHIBITS

<TABLE>
<CAPTION>
EXHIBIT
NUMBER
- -------

<S> <C> <C>
4.1 Description of certificate for shares of Boston Biomedica common stock *
4.2 Form of Warrant Certificate **
5.1 Legal Opinion of Brown, Rudnick, Freed & Gesmer, P.C. previously filed
23.1 Consent of PricewaterhouseCoopers LLP filed herewith
23.2 Consent of Brown, Rudnick, Freed & Gesmer, P.C. (included in Exhibit 5.1) previously filed
24.1 Power of Attorney previously filed
</TABLE>

- ----------

*The above exhibit was previously filed as an exhibit of the same number to our registration statement on Form S-1 (registration no. 333-10759), as amended, filed on August 23, 1996 and is incorporated herein by reference.

**The above exhibit was previously filed as exhibit number 4.3 to our quarterly report on Form 10-Q for the period ended September 30, 1999, and is incorporated herein by reference.

ITEM 17. UNDERTAKINGS

(a) The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement 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;

(2) That, for the purpose of determining any liability under the Securities Act of 1933, 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; and

(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.

(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) Not applicable.

(d) Not applicable.

(e) Not applicable.

(f) Not applicable.

(g) Not applicable.

(h) 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 SEC such indemnification is against public policy as expressed in the Securities Act of 1933 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 of whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

(i) Not applicable.

(j) Not applicable.

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 the requirements for filing on Form S-3 and has duly caused this pre-effective amendment number 2 to the registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the Town of West Bridgewater, Commonwealth of Massachusetts, on September 1, 2000.

BOSTON BIOMEDICA, INC.

By: /s/ Richard T. Schumacher

Richard T. Schumacher,
Chief Executive Officer

PURSUANT TO THE REQUIREMENTS OF THE SECURITIES ACT OF 1933, THIS PRE-EFFECTIVE AMENDMENT NUMBER 2 TO THE REGISTRATION STATEMENT HAS BEEN SIGNED BY THE FOLLOWING PERSONS IN THE CAPACITIES AND ON THE DATES INDICATED.

<TABLE>
<CAPTION>

SIGNATURE	TITLE	DATE
<S>	<C>	<C>
/s/ Richard T. Schumacher --- Richard T. Schumacher	Director and Principal Executive Officer	September 1, 2000
* --- Kevin W. Quinlan	Director and Principal Financial and Accounting Officer	September 1, 2000

*		
- ---------- Francis E. Capitanio	Director	September 1, 2000
*		
- ---------- Calvin A. Saravis, Ph.D.	Director	September 1, 2000
*		
- ---------- William R. Prather, R.Ph., M.D.	Director and Treasurer	September 1, 2000

* By: /s/ Richard T. Schumacher

Richard T. Schumacher,
Attorney-in-Fact

EXHIBIT INDEX

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Exhibit 23.1

CONSENT OF INDEPENDENT ACCOUNTANTS

We hereby consent to the incorporation by reference in this Pre-Effective Amendment No. 2 to the Registration Statement on Form S-3 (File No. 333-94379) of our report dated February 29, 2000 relating to the consolidated financial statements and financial statement schedule, which appears in Boston Biomedica, Inc.'s Annual Report on Form 10-K for the year ended December 31, 1999. We also consent to the incorporation by reference of our report dated July 10, 1998, except as to certain information in the second paragraph of Note 1, for which the date is September 30, 1998 relating to the financial statements of BioSeq, Inc., which appears in such Annual Report on Form 10-K. We also consent to the reference to us under the heading "Experts" in such Registration Statement.

/s/ PricewaterhouseCoopers LLP

Boston, Massachusetts
August 31, 2000