

PROSPECTUS

AEVI GENOMIC MEDICINE, INC.



26,176,126 Shares of Common Stock

This prospectus relates to the resale of up to 26,176,126 shares of common stock, par value \$0.0001 per share, of Aevi Genomic Medicine, Inc., by the selling stockholders identified beginning on page 8 of this prospectus, together with any additional selling stockholders identified in a post-effective amendment to the registration statement of which this prospectus is a part. Of these shares, 22,222,222 shares are outstanding shares of common stock held by the selling stockholders and 3,953,904 shares are shares of common stock issuable upon the exercise of warrants held by the selling stockholders.

We are not selling any shares of our common stock under this prospectus and we will not receive any of the proceeds from the sale of shares by the selling stockholders. We will, however, receive the net proceeds of any warrants exercised for cash. The selling stockholders may sell the shares of common stock described in this prospectus through public or private transactions from time to time at market prices prevailing at the time of sale or at negotiated prices. Additional information about how the selling stockholders may sell their shares of common stock is provided in the section of this prospectus entitled "Plan of Distribution."

Our common stock is listed on The NASDAQ Global Market under the symbol "GNMX." On December 27, 2017, the last reported sale price for our common stock on The NASDAQ Global Market was \$1.18 per share.

Investing in our common stock involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading "Risk Factors" beginning on page 4 of this prospectus and under similar headings in the other documents filed with the Securities and Exchange Commission that are incorporated by reference in this prospectus.

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

Prospectus dated January 4, 2018.

TABLE OF CONTENTS

ABOUT THIS PROSPECTUS	ii
PROSPECTUS SUMMARY	1
THE OFFERING	3
RISK FACTORS	4
FORWARD-LOOKING STATEMENTS	5
USE OF PROCEEDS	7
SELLING STOCKHOLDERS	8
PLAN OF DISTRIBUTION	11
LEGAL MATTERS	14
EXPERTS	14
WHERE YOU CAN FIND MORE INFORMATION	14
INFORMATION INCORPORATED BY REFERENCE	14

You should rely only on the information contained in, or incorporated by reference into, this prospectus and any applicable prospectus supplement, along with the information contained in any free writing prospectuses we have authorized for use in connection with a specific offering. We have not authorized anyone to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. This prospectus does not constitute an offer to sell, or a solicitation of an offer to purchase, the securities offered by this prospectus in any jurisdiction to or from any person to whom or from whom it is unlawful to make such offer or solicitation of an offer in such jurisdiction. You should not assume that the information contained in this prospectus, any applicable prospectus supplement or any related free writing prospectus is accurate as of any date other than the date on the front of the document, and you should not assume that the information contained in any document incorporated by reference in this prospectus is accurate as of any date other than the date of the document incorporated by reference. Our business, financial condition, results of operations and prospects may have changed since those dates. It is important for you to read and consider all the information contained in this prospectus and in any accompanying prospectus supplement, including the documents incorporated by reference herein or therein, before making your investment decision.

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we have filed with the Securities and Exchange Commission (the “SEC”) pursuant to which the selling stockholders named herein may, from time to time, offer and sell or otherwise dispose of the securities covered by this prospectus. You should not assume that the information contained in this prospectus is accurate on any date subsequent to the date set forth on the front cover of this prospectus or that any information we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus is delivered or securities are sold or otherwise disposed of on a later date. It is important for you to read and consider all information contained in this prospectus, including the Information Incorporated by Reference herein, in making your investment decision. You should also read and consider the information in the documents to which we have referred you under the captions “Where You Can Find More Information” and “Incorporation of Information by Reference” in this prospectus.

The selling stockholders may offer and sell shares of our common stock directly to purchasers through agents selected by the selling stockholders, or to or through underwriters or dealers. A prospectus supplement, if required, may describe the terms of the plan of distribution and set forth the names of any agents, underwriters or dealers involved in the sale of shares of our common stock. See “Plan of Distribution.”

Neither we nor the selling stockholders have authorized any dealer, salesman or other person to give any information or to make any representation other than those contained or incorporated by reference in this prospectus. You must not rely upon any information or representation not contained or incorporated by reference in this prospectus. This prospectus does not constitute an offer to sell or the solicitation of an offer to buy any of our securities other than the securities covered hereby, nor does this prospectus constitute an offer to sell or the solicitation of an offer to buy any securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction. Persons who come into possession of this prospectus in jurisdictions outside the United States are required to inform themselves about, and to observe, any restrictions as to the offering and the distribution of this prospectus applicable to those jurisdictions.

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference in the accompanying prospectus were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreements, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

Unless the context provides otherwise, all references in this prospectus to the “Company,” “Aevi Genomic Medicine,” “we,” “us” and “our” refer to Aevi Genomic Medicine, Inc., a Delaware corporation organized on January 27, 2000, and its wholly-owned subsidiaries, Medgenics Medical (Israel) Ltd. and neuroFix, LLC.

We use the Aevi Genomic Medicine logo as a trademark in the United States and elsewhere. All other trademarks or trade names referred to in this document are the property of their respective owners.

PROSPECTUS SUMMARY

This summary highlights selected information contained elsewhere or incorporated by reference into this prospectus, and does not contain all the information that you should consider before investing in our common stock. You should carefully read the entire prospectus, including the risks of investing on our common stock discussed under the heading "Risk Factors" on page 4 of this prospectus and under similar headings in the other documents that are incorporated by reference herein.

Overview

We are a clinical stage biopharmaceutical company with an emphasis on identifying the genetic drivers of disease and applying this understanding to the pursuit of differentiated novel therapies for pediatric onset, life-altering diseases, including rare and orphan diseases. We look to find treatments for genetically defined diseases for which there are limited therapeutic options currently available, with a primary focus on pediatric patients. This strategy begins with identifying and genetically validating a therapeutic target and using genomics to guide product development. The strategy also involves identifying and acquiring otherwise abandoned or overlooked drug candidates and matching targets and mechanisms of action to novel genetic discoveries.

We have partnered with the Center for Applied Genomics ("CAG"), at The Children's Hospital of Philadelphia ("CHOP"), to implement a genomic medicine driven approach to drug development. CAG's assets include a fully automated biorepository containing specimens from more than 75,000 pediatric patients and 150,000 relatives of those patients. The sample is highly enriched for rare and orphan diseases and the large majority of patients have been genotyped. Their phenotypes are recorded in a modern electronic health record that is linked to the genomics database and biorepository. The patients in the database have consented to anonymized use of their data for research and follow up contact if needed.

CAG continues to discover important and novel genetic biomarkers by both genome-wide association studies and exome sequencing and analysis of affected individuals and their family members. Such markers not only identify patients with the disease but frequently point to the cause of the disease and suggest targets and feasible intervention strategies that include protein or peptide therapy, monoclonal antibodies, drugs or gene therapy. By working initially in pediatric populations of specific diseases, we can minimize the confounding environmental factors seen in older patients. In addition, the availability of robust genetic biomarkers allows us to design trials that focus on a highly-enriched patient population that we believe is more likely to respond to targeted therapies and further enhance the likelihood of clinical and regulatory success. We believe this will allow us to implement more efficient and shorter clinical development programs, that will lead to higher value medicines that can address critical needs in patients suffering from rare and orphan diseases.

Recent Developments

Special Stockholder Meeting

On October 17, 2017, we held our previously announced special meeting of stockholders (the "Special Meeting"). At the Special Meeting, our stockholders of record as of September 5, 2017, voted to approve (i) the issuance by us of shares of our common stock, \$0.0001 par value per share, accompanying warrants to purchase shares of common stock (the "Warrants") and the shares of common stock issuable upon exercise of the Warrants (the "Warrant Shares"), pursuant to and in accordance with the terms of the private placement financing transaction contemplated by a securities purchase agreement, dated August 9, 2017 (the "Purchase Agreement"), (ii) an amendment to our Amended and Restated Certificate of Incorporation to increase the total number of authorized shares of common stock from 100,000,000 shares to 200,000,000 shares and (iii) to adjourn the Special Meeting, if necessary, to solicit additional proxies, in the event that there were not sufficient votes at the time of the Special Meeting to approve Proposal No. 1 or Proposal No. 2.

PIPE Offering

At the Special Meeting, prior to the consummation of the Offering (as defined below), we obtained stockholder approval for the Offering (as outlined above in Proposal No. 1), pursuant to the requirements of Nasdaq Listing Rule 5635.

On October 17, 2017, we sold an aggregate of 22,222,222 shares (the “Shares”) of our common stock, and Warrants exercisable for up to an aggregate of 3,953,904 shares of common stock at a purchase price of \$1.26 per share of common stock and accompanying Warrants (the “Offering”) to The Children’s Hospital of Philadelphia Foundation (the “CHOP Foundation”), as the lead purchaser, and certain other institutional and accredited investors (collectively, the “Purchasers”) pursuant to the Purchase Agreement.

The aggregate gross proceeds from the Offering were \$28.0 million. We intend to use the net proceeds from the Offering primarily to further the development of our two lead clinical programs, to support our ongoing collaboration with CHOP, to develop other product candidates and for general corporate purposes.

In connection with the Offering, we entered into a registration rights agreement (the “Registration Rights Agreement”) with the Purchasers. Pursuant to the Registration Rights Agreement, we agreed to prepare and file a registration statement (the “Resale Registration Statement”) with the SEC within 60 days after the closing of the Offering for purposes of registering the resale of the Shares and the shares of common stock issuable upon exercise of the Warrants. We also agreed to use commercially reasonable efforts to cause the Resale Registration Statement to be declared effective by the SEC within 90 days after the closing of the Offering (120 days in the event the Resale Registration Statement is reviewed by the SEC). We also granted the Purchasers certain demand and piggyback registration rights. We also agreed, among other things, to indemnify the selling holders under the registration statements from certain liabilities and to pay all fees and expenses incident to our performance of or compliance with the Registration Rights Agreement.

Corporate Information

We were incorporated under the laws of the State of Delaware in January 2000 as Medgenics, Inc and changed our name to Aevi Genomic Medicine, Inc. on December 15, 2016. Our principal executive offices are located at 435 Devon Park Drive, Suite 715, Wayne, PA 19087 and our telephone number is (610) 254-4201. Our website address is www.aevigenomics.com. We make available free of charge on our website our annual, quarterly and current reports, including amendments to such reports, as soon as reasonably practicable after we electronically file such material with, or furnish such material to, the SEC. Information contained on our website is not incorporated by reference into this prospectus, and you should not consider information contained on our website as part of this prospectus.

THE OFFERING

This prospectus relates to the resale of up to 26,176,126 shares of our common stock, of which 22,222,222 shares are outstanding shares of common stock held by the selling stockholders and 3,953,904 shares are shares of common stock issuable upon the exercise of warrants held by the selling stockholders identified in this prospectus, including their transferees, pledgees, donees or successors. See "Selling Stockholders."

The selling stockholders may offer to sell the shares being offered in this prospectus at fixed prices, at prevailing market prices at the time of sale, at varying prices or at negotiated prices. Our common stock is listed on The NASDAQ Global Market under the symbol "GNMX."

We have agreed to register the offer and sale of the common stock to satisfy registration rights we have granted to the selling stockholders. We will not receive any proceeds from the sale or other disposition of the common stock by the selling stockholders. We will, however, receive the net proceeds of any warrants exercised for cash.

RISK FACTORS

Investing in our common stock involves risks. Prior to making a decision about investing in our securities, you should carefully consider the factors discussed under the heading “Risk Factors” in any prospectus supplement, together with all of the other information contained or incorporated by reference in this prospectus or any prospectus supplement. You should also consider the risks, uncertainties and assumptions discussed under the heading “Risk Factors” in our Annual Report on Form 10-K for the fiscal year ended December 31, 2016, filed on March 9, 2017, with the SEC, our Quarterly Report on Form 10-Q for the period ended March 31, 2017, filed on May 10, 2017, with the SEC, our Quarterly Report on Form 10-Q for the period ended June 30, 2017, filed on August 9, 2017, with the SEC and our Quarterly Report on Form 10-Q for the period ended September 30, 2017, filed on November 2, 2017, with the SEC, each of which is incorporated herein by reference, and may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future. The risks and uncertainties we have described therein are not the only risks that we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our operations.

FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference herein contain, and any prospectus supplement and the documents incorporated by reference therein may contain, forward-looking statements that involve substantial risks and uncertainties. All statements, other than statements of historical facts, included in this prospectus, any prospectus or the documents incorporated herein or therein by reference regarding our strategy, future operations, future financial position, future revenues, projected costs, prospects, plans and objectives of management are forward-looking statements. Forward-looking statements are often identified by the use of words such as, but not limited to, “can,” “may,” “will,” “should,” “could,” “would,” “expects,” “plans,” “continues,” “anticipates,” “intends,” “seeks,” “targets,” “believes,” “estimates,” “projects,” “predicts,” “potential” and similar expressions or variations intended to identify forward-looking statements.

The forward-looking statements in this prospectus and the documents incorporated herein by reference include, among other things, statements about:

- our ability to obtain additional funding to develop our product candidates;
- the need to obtain regulatory approval of our product candidates;
- the success of our clinical trials through all phases of clinical development;
- any delays in regulatory review and approval of product candidates in clinical development;
- our ability to commercialize our product candidates;
- market acceptance of our product candidates;
- competition from existing products or new products that may emerge;
- regulatory difficulties relating to products that have already received regulatory approval;
- potential product liability claims;
- our dependency on third-party manufacturers to supply or manufacture our products;
- our ability to establish or maintain collaborations, licensing or other arrangements;
- our ability and third parties’ abilities to protect intellectual property rights;
- compliance with obligations under intellectual property licenses with third parties;
- our ability to adequately support future growth; and
- our ability to attract and retain key personnel to manage our business effectively.

We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. We have included important factors in the cautionary statements included in this prospectus, particularly those incorporated by reference in the section captioned “Risk Factors” that we believe could cause actual results or events to differ materially from the forward-looking statements that we make. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures, collaborations or investments we may make.

You should read this prospectus and the documents that we incorporate by reference herein completely and with the understanding that our actual future results may be materially different from what we expect. We do not assume any obligation to update any forward-looking statements.

Except as required by law, we undertake no obligation to update or revise any forward-looking statements to reflect new information or future events or developments. You should not assume that our silence over time means that actual events are bearing out as expressed or implied in such forward-looking statements. Before deciding to purchase our securities, you should carefully consider the risk factors discussed and incorporated by reference in this prospectus and in the registration statement of which this prospectus is a part.

USE OF PROCEEDS

We will not receive any of the proceeds from the sale of shares of our common stock in this offering. The selling stockholders will receive all of the proceeds from this offering. We will, however, receive the net proceeds of any warrants exercised for cash.

SELLING STOCKHOLDERS

The shares of common stock being offered by the selling stockholders are those previously issued to the selling stockholders in the Offering, and those issuable to the selling stockholders, upon exercise of the warrants issued to the selling stockholders in the Offering. For additional information regarding the issuances of those shares of common stock and warrants, see “Prospectus Summary-PIPE Offering” above. We are registering the shares of common stock in order to permit the selling stockholders to offer the shares for resale from time to time. Except for their ownership of the shares of common stock and the warrants, Adage Capital Partners, L.P. and Baker Bros. Advisors, LP have not had any material relationship with us within the past three years. In November 2014, we entered into a license agreement and sponsored research agreement with CHOP with respect to the recruitment and genetic analysis of patients with rare diseases to accelerate discovery of diagnostic and therapeutic targets, and the rest of the selling stockholders listed below have been and are currently members of our Board of Directors and/or are executive officers.

The table below lists the selling stockholders and other information regarding the beneficial ownership of the shares of common stock by each of the selling stockholders. The second column lists the number of shares of common stock beneficially owned by each selling stockholder based on its ownership of the shares of common stock and warrants as of November 15, 2017, assuming exercise of the warrants held by the selling stockholders on that date. On November 15, 2017, we had 59,332,265 shares of common stock outstanding. The third column lists the shares of common stock being offered by this prospectus by the selling stockholders.

In accordance with the terms of a registration rights agreement with the selling stockholders, this prospectus generally covers the resale of the sum of (i) the number of shares of common stock issued to the selling stockholders on October 17, 2017 pursuant to a Securities Purchase Agreement dated as of August 9, 2017 and (ii) the maximum number of shares of common stock issuable upon exercise of the related warrants, determined as if the outstanding warrants were exercised in full as of the trading day immediately preceding the date this registration statement was initially filed with the SEC, without regard to any limitations on the exercise of the warrants and all subject to adjustment as provided in the registration right agreement. The fourth column assumes the sale of all of the shares offered by the selling stockholders pursuant to this prospectus. Except as otherwise set forth below, the address of each of the persons or entities listed in the table is c/o Aevi Genomic Medicine, Inc., 435 Devon Park Drive, Suite 715, Wayne, Pennsylvania 19087.

The selling stockholders may sell all, some or none of their shares in this offering. See “Plan of Distribution.” If required, information about other selling stockholders, except for any future transferees, pledgees, donees or successors of the selling stockholders named in the table below, will be set forth in a post-effective amendment to the registration statement of which this prospectus is a part. A supplement to this prospectus pursuant to Rule 424(b) under the Securities Act will be used to post-effectively update this selling stockholder table to reflect a transfer from a previously identified stockholder.

Name of Selling Stockholder	Shares Beneficially Owned Prior to the Offering		Number of Shares Being Registered for Resale	Shares Beneficially Owned After the Offering	
	Shares	Percentage		Shares	Percentage
The Children’s Hospital of Philadelphia Foundation (1)	18,697,233	30.1%	18,697,233	—	—%
Adage Capital Partners, L.P. (2)	5,923,633	9.9%	2,804,585	3,119,038	4.9%
Baker Bros. Advisors, LP (3)	4,055,142	6.8%	3,739,447	880,539	1.4%
Sol J. Barer (4)	2,212,644	3.7%	495,944	1,716,700	2.7%
Eugene A. Bauer (5)	287,816	*	23,371	264,445	*
Michael F. Cola (6)	2,007,411	3.3%	140,228	1,867,183	2.9%
Alastair Clemow (7)	221,780	*	23,371	198,409	*
Barbara Duncan (8)	116,782	*	70,115	46,667	*
Wilbur H. Gantz (9)	433,134	*	46,744	386,390	*
Joseph J. Grano, Jr. (10)	475,908	*	46,744	429,164	*
Garry A. Neil (11)	1,208,317	2.0%	88,344	1,119,973	1.7%

* Represents less than 1% of the total aggregate amount of shares of our common stock

(1) The Children’s Hospital of Philadelphia Foundation (the “Foundation”) is the beneficial owner of 18,697,233 shares of common stock, consisting of 15,873,016 shares of common stock, and 2,824,217 shares of common stock issuable upon the exercise of a Warrant held by the Foundation. The Foundation’s Board of Trustees, or a committee designated by the Board of Trustees, has voting and investment power over the securities. No member of the Foundation’s Board of Trustees or investment committee may act individually to vote or sell securities held by the Foundation; therefore, no individual board or committee member is deemed to beneficially own, within the meaning of Rule 13d-3, any securities held by the Foundation solely by virtue of the fact that he or she is a member of the Board of Trustees or the investment committee. The Foundation’s address is 3401 Street & Civic Center Boulevard, Philadelphia, Pennsylvania 19104.

(2) Adage Capital Partners, L.P. (“Adage”) is the beneficial owner of 5,923,633 shares of common stock, consisting of 5,500,000 shares of common stock, and 423,633 shares of common stock issuable upon exercise of a Warrant. Adage Capital Partners GP, L.L.C. is the general partner of Adage, and Adage Capital Advisors, L.L.C. is the managing member of Adage Capital Partners GP, L.L.C.; therefore, Adage Capital Partners GP, L.L.C. and Adage Capital Partners L.P. may be deemed to beneficially own securities owned by Adage. Adage’s address is 200 Clarendon Street, Boston, Massachusetts 02116.

(3) The shares of common stock beneficially owned by Baker Bros. Advisors LP (“BBA”) are held by the following selling stockholders: (i) 667, L.P. (“667”) (415,911 shares after giving effect to the Beneficial Ownership Limitation as described in this footnote), (ii) Baker Brothers Life Sciences, L.P. (“BBLs”) (3,639,231 shares after giving effect to the Beneficial Ownership Limitation). As a result of the application of the Beneficial Ownership Limitation, the number of shares beneficially owned prior to the Offering does not include the following as being beneficially owned by the selling stockholders: (i) 57,035 shares of common stock issuable upon exercise of Warrants to purchase common stock held by 667, and (ii) 507,809 shares of common stock issuable upon exercise of Warrants to purchase common stock held by BBLs. The number of shares being registered for resale and the number of shares beneficially owned after the Offering reflects the exercise of such Warrants into common stock and the sale of such common stock in the Offering. BBA is the management company and investment adviser to 667 and BBLs and may be deemed to beneficially own all of the securities held by 667 and BBLs. Baker Bros. Advisors (GP) LLC (“BBA-GP”) is the sole general partner of BBA. Julian C. Baker and Felix J. Baker have voting and investment power over our securities held by each of 667 and BBLs, as principals of BBA-GP. Julian C. Baker, Felix J. Baker, BBA and BBA-GP disclaim beneficial ownership of our securities held by 667 and BBLs, except to the extent of their pecuniary interest therein. BBA’s address is 860 Washington Street, 3rd Floor, New York, New York 10014. Under the terms of the Warrants issued to the selling stockholders, pursuant to a side letter, the selling stockholders are not permitted to exercise such Warrants to purchase common stock to the extent that such exercise would result in the selling stockholders (and their affiliates) beneficially owning more than 4.99% of the number of shares of our common stock outstanding immediately after giving effect to the issuance of shares of common stock issuable upon exercise of such Warrants to purchase common stock. This limitation on exercise of the Warrants to purchase common stock issued to the selling stockholders is referred to in this footnote as the “Beneficial Ownership Limitation.” The selling stockholders have the right to increase or decrease this beneficial ownership limitation in their discretion on 65 days’ prior written notice to us to any other percentage specified in such notice.

(4) Consists of: 1,028,032 shares of common stock, 15,000 options having an exercise price of \$7.25 per share expiring on January 2, 2023, 15,000 options having an exercise price of \$6.50 per share expiring on January 3, 2024, 80,000 options having an exercise price of \$7.01 per share expiring on February 18, 2025 and 80,000 options having an exercise price of \$4.83 per share expiring on April 15, 2026 held directly by Dr. Barer; 153,846 shares of common stock held by Dr. Barer’s wife; 200,000 options having an exercise price of \$5.22 per share expiring on September 13, 2023, held by the Sol J. Barer 2014 Grantor Retained Annuity Trust No. III, of which Dr. Barer is the sole trustee and annuitant; 200,000 options having an exercise price of \$5.22 per share expiring on September 13, 2023, held by the Meryl Barer 2014 Grantor Retained Annuity Trust No. III, of which Dr. Barer’s wife is the sole trustee and annuitant; 365,854 shares of common stock held by the Sol J. Barer 2013 Grantor Retained Annuity Trust No. IV, of which Dr. Barer is the sole trustee and annuitant; and 74,912 shares of common stock issuable upon exercise of Warrants held by Dr. Barer.

(5) Consists of: 165,715 shares of common stock, 28,571 options having an exercise price of \$8.19 per share expiring on September 14, 2020, 50,000 options having an exercise price of \$6.70 per share expiring on November 11, 2023, 20,000 options having an exercise price of \$7.01 per share expiring on February 18, 2025, 20,000 options having an exercise price of \$4.83 per share expiring on April 15, 2026 and 3,530 shares of common stock issuable upon exercise of Warrants held by Mr. Bauer.

(6) Consists of: 218,483 shares of common stock, 1,500,000 options having an exercise price of \$4.22 per share expiring on September 13, 2023, 17,327 options having an exercise price of \$6.45 per share expiring on April 16, 2024, 167,087 options having an exercise price of \$7.01 per share expiring on February 18, 2025, 83,333 options having an exercise price of \$4.83 per share expiring on April 15, 2026 and 21,181 shares of common stock issuable upon exercise of Warrants held by Mr. Cola.

(7) Consists of: 57,536 shares of common stock, 12,857 options having an exercise price of \$8.19 per share expiring on September 13, 2020, 12,857 options having an exercise price of \$6.55 per share expiring on January 11, 2021, 15,000 options having an exercise price of \$2.66 per share expiring on January 3, 2022, 15,000 options having an exercise price of \$7.25 per share expiring on January 2, 2023, 50,000 options having an exercise price of \$6.70 per share expiring on November 11, 2023, 15,000 options having an exercise price of \$6.50 per share expiring on January 2, 2024 and 20,000 options having an exercise price of \$7.01 per share expiring on February 18, 2025, 20,000 options having an exercise price of \$4.83 per share expiring on April 15, 2026 and 3,530 shares of common stock issuable upon exercise of Warrants held by Mr. Clemow.

(8) Consists of: 59,524 shares of common stock, 26,667 options having an exercise price of \$8.09 per share expiring on July 22, 2025, 20,000 options having an exercise price of \$4.83 per share expiring on April 15, 2026 and 10,591 shares of common stock issuable upon exercise of Warrants held by Ms. Duncan.

(9) Consists of: 71,073 shares of common stock, 300,000 options having an exercise price of \$6.29 per share expiring on October 16, 2018, 15,000 options having an exercise price of \$6.50 per share expiring on January 2, 2024, 20,000 options having an exercise price of \$7.01 per share expiring on February 18, 2025, 20,000 options having an exercise price of \$4.83 per share expiring on April 15, 2026 and 7,061 shares of common stock issuable upon exercise of Warrants held by Mr. Gantz.

(10) Consists of: 113,847 shares of common stock, 300,000 options having an exercise price of \$4.99 per share expiring on March 15, 2018, 15,000 options having an exercise price of \$6.50 per share expiring on January 2, 2024, 20,000 options having an exercise price of \$7.01 per share expiring on February 18, 2025, 20,000 options having an exercise price of \$4.83 per share expiring on April 15, 2026 and 7,061 shares of common stock issuable upon exercise of Warrants held by Mr. Grano.

(11) Consists of: 114,774 shares of common stock, 900,000 options having an exercise price of \$4.22 per share expiring on September 13, 2023, 13,532 options having an exercise price of \$6.45 per share expiring on April 16, 2024, 100,000 options having an exercise price of \$7.01 per share expiring on February 18, 2025, 66,667 options having an exercise price of \$4.83 per share expiring on April 15, 2026 and 13,344 shares of common stock issuable upon exercise of Warrants held by Mr. Neil.

PLAN OF DISTRIBUTION

We are registering the shares of common stock issued to the selling stockholders and issuable upon exercise of the warrants issued to the selling stockholders to permit the resale of those shares of common stock by such holders of common stock and warrants from time to time after the date of this prospectus. We will not receive any of the proceeds from the sale by the selling stockholders of the shares of common stock. We will, however, receive the net proceeds of any warrants exercised for cash. We will bear all fees and expenses incident to our obligation to register the shares of common stock.

The selling stockholders may sell all or a portion of the shares of common stock beneficially owned by them and offered hereby from time to time directly or through one or more underwriters, broker-dealers or agents. If the shares of common stock are sold through underwriters or broker-dealers, the selling stockholders will be responsible for underwriting discounts or commissions or agent's commissions. The shares of common stock may be sold on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale, in the over-the-counter market or in transactions otherwise than on these exchanges or systems or in the over-the-counter market and in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at negotiated prices. These sales may be effected in transactions, which may involve crosses or block transactions. The selling stockholders may use any one or more of the following methods when selling shares:

- 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;
- settlement of short sales entered into after the effective date of the registration statement of which this prospectus is a part;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- through the writing or settlement of options or other hedging transactions, whether such options are listed on an options exchange or otherwise;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

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

Broker-dealers engaged by the selling stockholders may arrange for other broker-dealers to participate in sales. If the selling stockholders effect such transactions by selling shares of common stock to or through underwriters, broker-dealers or agents, such underwriters, broker-dealers or agents may receive commissions in the form of discounts, concessions or commissions from the selling stockholders or commissions from purchasers of the shares of common stock for whom they may act as agent or to whom they may sell as principal. Such commissions will be in amounts to be negotiated, but, except as set forth in a supplement to this Prospectus, in the case of an agency transaction will not be in excess of a customary brokerage commission in compliance with FINRA Rule 2121 and Supplementary Material .01 and Supplementary Material .02 thereto.

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

The selling stockholders may, from time to time, pledge or grant a security interest in some or all of the warrants or shares of common stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of common stock from time to time pursuant to this prospectus or any amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act of 1933, as amended, amending, if necessary, the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus. The selling stockholders also may transfer and donate the shares of common stock in other circumstances in which case the transferees, donees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus and may sell shares of common stock from time to time under this prospectus after a supplement to this prospectus has been filed under Rule 424(b)(3) or other applicable provision of the Securities Act amending the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus.

The selling stockholders and any broker-dealer or agents participating in the distribution of the shares of common stock may be deemed to be “underwriters” within the meaning of Section 2(a)(11) of the Securities Act in connection with such sales. In such event, any commissions paid, or any discounts or concessions allowed to, any such broker-dealer or agent and any profit on the resale of the shares purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. Selling stockholders who are “underwriters” within the meaning of Section 2(a)(11) of the Securities Act will be subject to the applicable prospectus delivery requirements of the Securities Act including Rule 172 thereunder and may be subject to certain statutory liabilities of, including but not limited to, Sections 11, 12 and 17 of the Securities Act and Rule 10b-5 under the Securities Exchange Act of 1934, as amended, or the Exchange Act.

Each selling stockholder has informed the Company that it is not a registered broker-dealer and does not have any written or oral agreement or understanding, directly or indirectly, with any person to distribute the common stock. Upon the Company being notified in writing by a selling stockholder that any material arrangement has been entered into with a broker-dealer for the sale of common stock through a block trade, special offering, exchange distribution or secondary distribution or a purchase by a broker or dealer, a supplement to this prospectus will be filed, if required, pursuant to Rule 424(b) under the Securities Act, disclosing (i) the name of each such selling stockholder and of the participating broker-dealer(s), (ii) the number of shares involved, (iii) the price at which such the shares of common stock were sold, (iv) the commissions paid or discounts or concessions allowed to such broker-dealer(s), where applicable, (v) that such broker-dealer(s) did not conduct any investigation to verify the information set out or incorporated by reference in this prospectus, and (vi) other facts material to the transaction. In no event shall any broker-dealer receive fees, commissions and markups, which, in the aggregate, would exceed eight percent (8.0%).

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

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

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

We will pay all expenses of the registration of the shares of common stock pursuant to the registration rights agreement, including, without limitation, SEC filing fees and expenses of compliance with state securities or “blue sky” laws; *provided, however*, that each selling stockholder will pay all underwriting discounts and selling commissions, if any, and any related legal expenses incurred by it. We will indemnify the selling stockholders against certain liabilities, including some liabilities under the Securities Act, in accordance with the registration rights agreement, or the selling stockholders will be entitled to contribution. We may be indemnified by the selling stockholders against civil liabilities, including liabilities under the Securities Act, that may arise from any written information furnished to us by the selling stockholders specifically for use in this prospectus, in accordance with the related registration rights agreements, or we may be entitled to contribution.

LEGAL MATTERS

The validity of the shares of common stock offered by this prospectus has been passed upon for us by Pepper Hamilton LLP.

EXPERTS

The consolidated financial statements of Aevi Genomic Medicine, Inc. at December 31, 2016 and for the year then ended, incorporated by referenced in this Prospectus and Registration Statement, have been audited by Ernst & Young LLP, independent registered public accounting firm, and at December 31, 2015 and for each of the two years in the period ended December 31, 2015, by Kost Forer Gabbay & Kaisierer, a member of EY Global, independent registered public accounting firm, as set forth in their respective reports thereon, incorporated by reference herein, and are included in reliance upon such reports given on the authority of such firms as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3, including exhibits and schedules, under the Securities Act with respect to the securities to be sold in this offering. This prospectus does not contain all the information contained in the registration statement. For further information with respect to us and the securities to be sold in this offering, we refer you to the registration statement and the exhibits and schedules attached to the registration statement. Statements contained in this prospectus as to the contents of any contract, agreement or other document referred to are not necessarily complete. When we make such statements, we refer you to the copies of the contracts or documents that are filed as exhibits to the registration statement because those statements are qualified in all respects by reference to those exhibits.

We are subject to the informational requirements of the Exchange Act and we file annual, quarterly and current reports, proxy statements and other information with the SEC. You can read our SEC filings, including the registration statement, at the SEC's website at www.sec.gov. You may also read and copy any document we file with the SEC at its public reference facility at 100 F Street, N.E., Washington, D.C. 20549, on official business days during the hours of 10:00 a.m. to 3:00 p.m.

You may also obtain copies of the documents at prescribed rates by writing to the Public Reference Section of the SEC at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the public reference facility.

We make available free of charge on our website at www.aevigenomicmedicine.com, our annual, quarterly and current reports, including any amendments thereto, as soon as reasonably practicable after these materials are filed with or furnished to the SEC. The information on, or accessible through, our website is not part of this prospectus.

INFORMATION INCORPORATED BY REFERENCE

The SEC allows us to "incorporate by reference" into this prospectus the information in other documents that we file with it. This means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be a part of this prospectus, and information in documents that we file later with the SEC will automatically update and supersede information contained in documents filed earlier with the SEC or contained in this prospectus. We incorporate by reference in this prospectus (i) the documents listed below, (ii) all documents that we file with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of the initial filing of the registration statement of which this prospectus is included and prior to the effectiveness of such registration statement, and (iii) and any future filings that we may make with the SEC under Sections 13(a), 13(c), 14, or 15(d) of the Exchange Act prior to the termination of the offering under this prospectus; provided, however, that we are not incorporating, in each case, any documents or information deemed to have been furnished and not filed in accordance with SEC rules:

- our Annual Report on Form 10-K for the fiscal year ended December 31, 2016 (filed on March 9, 2017);
- our Quarterly Reports on Form 10-Q for the fiscal quarter ended March 31, 2017 (filed on May 10, 2017), for the fiscal quarter ended June 30, 2017 (filed on August 9, 2017) and for the fiscal quarter ended September 30, 2017 (filed on November 2, 2017);
- our Current Reports on Form 8-K filed with the SEC on February 27, 2017 (only with respect to Item 1.01), April 25, 2017, June 19, 2017, June 30, 2017, August 11, 2017, August 15, 2017, October 18, 2017 and December 4, 2017; and
- the description of our common stock contained in our registration statement on Form 8-A filed with the SEC on March 24, 2011.

You may obtain a copy of any or all of the documents referred to above which may have been or may be incorporated by reference into this prospectus, except for exhibits to those documents (unless the exhibits are specifically incorporated by reference into those documents) at no cost to you by writing or telephoning us at the following address: Aevi Genomic Medicine, Inc., 435 Devon Park Drive, Suite 715, Wayne, PA 19087, telephone number (610) 254-4201.