

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

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

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

Delaware
(State or other jurisdiction of
incorporation or organization)

04-3308180
(I.R.S. Employer
Identification Number)

**1000 Winter Street
Waltham, Massachusetts 02451
(781) 890-9989**
(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive Offices)

**Shai N. Gozani, M.D., Ph.D.
President and Chief Executive Officer
NeuroMetrix, Inc.
1000 Winter Street
Waltham, Massachusetts 02451
(781) 890-9989**
(Name, Address, Including Zip Code, and Telephone Number, Including Area Code, of Agent for Service)

Copies to:
**Megan N. Gates, Esq.
Mintz, Levin, Cohn, Ferris,
Glovsky and Popeo, P.C.
One Financial Center
Boston, MA 02111
Telephone: (617) 542-6000
Fax: (617) 542-2241**

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

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

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

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

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

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

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

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

Large accelerated filer	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/> (Do not check if a smaller reporting company)	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Amount to be Registered(1)	Proposed Maximum Offering Price Per Unit(2)	Proposed Maximum Aggregate Offering Price(2)	Amount of Registration Fee(4)
Common stock, \$0.0001 par value per share (3)	—	—	—	—
Preferred stock, \$0.001 par value per share	—	—	—	—
Warrants	—	—	—	—
Rights	—	—	—	—
Total			\$ 25,000,000	\$ 3,030.00 (4)

(1) There are being registered hereunder such indeterminate number of shares of common stock, such indeterminate number of shares of preferred stock, such indeterminate number of warrants to purchase common stock or preferred stock, or such indeterminate number of rights, as shall have an aggregate initial offering price not to exceed \$25,000,000. Any securities registered hereunder may be sold separately or as units with other securities registered hereunder. The securities registered also include such indeterminate amounts and numbers of shares of common stock and numbers of shares of preferred stock, as may be issued upon conversion of or exchange for preferred stock that provide for conversion or exchange, upon exercise of warrants or pursuant to the anti-dilution provisions of any such securities. In addition, pursuant to Rule 416 under the Securities Act of 1933, as amended, the shares being registered hereunder includes such indeterminate number of shares of

common stock and preferred stock as may be issuable with respect to the shares being registered hereunder as a result of stock splits, stock dividends or similar transactions.

- (2) The proposed maximum per unit and aggregate offering prices per class of security will be determined from time to time by the registrant in connection with the issuance by the registrant of the securities registered hereunder and is not specified as to each class of security pursuant to General Instruction II.D. of Form S-3 under the Securities Act of 1933, as amended.
- (3) Pursuant to the Shareholder Rights Agreement, dated as of March 7, 2007, between the Registrant and American Stock Transfer & Trust Company, as amended, each share of common stock has an attached right to purchase our Series A Junior Cumulative Preferred Stock, which rights are not currently exercisable.
- (4) Calculated pursuant to Rule 457(o) under the Securities Act of 1933, as amended. As discussed in the paragraph below, pursuant to Rule 415(a)(6) under the Securities Act of 1933, as amended, this registration statement includes, as of the date of filing of this registration statement, \$25,000,000 of unsold securities that had previously been registered and for which the registration fee had previously been paid. Accordingly, the amount of the registration fee that remains payable at the time of filing is \$1,938.50, because the registrant paid a total registration fee of \$1,091.50 for such unsold securities, which fee will continue to be applied to such unsold securities.

Pursuant to Rule 415(a)(6), the offering of the unsold securities registered under the 2016 Registration Statement will be deemed terminated as of the date of effectiveness of this registration statement. If the registrant sells any of such unsold securities pursuant to the 2016 Registration Statement after the date of this filing, and prior to the date of effectiveness, of this registration statement, the registrant will file a pre-effective amendment to this registration statement which will reduce the number of such unsold securities included on this registration statement and increase the additional securities registered hereon so that the total amount of securities registered hereon will equal \$25,000,000, as reflected in footnote 1 to the table above, and will pay the additional registration fee resulting therefrom.

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.

Subject to Completion, dated January 24, 2019

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

PRELIMINARY PROSPECTUS

NEUROMETRIX, INC.

\$25,000,000

**Common Stock
Preferred Stock
Warrants
Rights**

This prospectus will allow us to issue, from time to time at prices and on terms to be determined at or prior to the time of the offering, up to \$25,000,000 of any combination of the securities described in this prospectus, either individually or in units. We may also offer common stock upon conversion of or exchange for the preferred stock; or common stock or preferred stock upon the exercise of warrants or rights.

This prospectus describes the general terms of these securities and the general manner in which these securities will be offered. We will provide the specific terms of these securities in supplements to this prospectus. The prospectus supplements will also describe the specific manner in which these securities will be offered and may also supplement, update or amend information contained in this document. You should read this prospectus and any applicable prospectus supplement, as well as any documents incorporated by reference into this prospectus and any prospectus supplement, before you invest.

We may offer these securities in amounts, at prices and on terms determined at the time of offering. The securities may be sold directly by us to investors, through agents designated from time to time or to or through underwriters or dealers. If any underwriters or agents are involved in the sale of our securities with respect to which this prospectus is being delivered, the names of such underwriters or agents and any applicable fees, commissions or discounts and over-allotment options will be set forth in a prospectus supplement. The price to the public of such securities and the net proceeds that we expect to receive from such sale will also be set forth in a prospectus supplement. For additional information on the methods of sale, you should refer to the section entitled "Plan of Distribution" in this prospectus.

Our common stock is quoted on the Nasdaq Capital Market under the symbol "NURO." If we decide to list or seek a quotation for any other securities, the prospectus supplement relating thereto will disclose the exchange or market on which such securities will be listed or quoted. On January 23, 2019, the last reported sale price of our common stock on the Nasdaq Capital Market was \$1.29 per share. Prospective purchasers of common stock are urged to obtain current information as to the market prices of our common stock.

As of January 23, 2019, the aggregate market value of our outstanding common stock held by non-affiliates was approximately \$9,538,829, based on 7,680,463 shares of outstanding common stock, of which 7,394,441 shares were held by non-affiliates, and a per share price of \$1.29, which was the closing sale price of our common stock on that date. We have not offered any securities during the period of 12 calendar months immediately prior to, and including, the date of this prospectus pursuant to General Instruction I.B.6. of Form S-3. The applicable prospectus supplement will contain information, where applicable, as to any other listing, if any, on the Nasdaq Capital Market or any securities market or other securities exchange of the securities covered by the prospectus supplement.

Investing in these securities involves certain risks. See the information included and incorporated by reference in this prospectus and the accompanying prospectus supplement for a discussion of the factors you should carefully consider before deciding to purchase these securities. See "Risk Factors" on page 3. We may include specific risk factors in supplements to this prospectus under the caption "Risk Factors." This prospectus may not be used by us to offer or sell our securities unless accompanied by a prospectus supplement.

Our principal executive offices are located at 1000 Winter Street, Waltham, Massachusetts 02451, and our telephone number is (781) 890-9989.

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

The date of this prospectus is _____, 2019

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, which we refer to as the SEC, utilizing a “shelf” registration process. Under this shelf registration process, we may from time to time sell any combination of the securities described in this prospectus in one or more offerings up to a total dollar amount of \$25,000,000. We may offer shares of our common stock and preferred stock and/or warrants, rights or purchase contracts to purchase any of such securities, either individually or in units.

This prospectus provides you with a general description of the securities we may offer. Each time we sell securities, we will provide one or more prospectus supplements that will contain specific information about the terms of the offering. This prospectus does not contain all of the information included in the registration statement. For a more complete understanding of the offering of the securities, you should refer to the registration statement, including its exhibits. The prospectus supplement may also add, update or change information contained in this prospectus. You should read both this prospectus and the accompanying prospectus supplement together with the additional information described under the heading “Where You Can Find More Information” before making an investment decision.

You should rely only on the information contained in or incorporated by reference in this prospectus, any accompanying prospectus supplement or in any related free writing prospectus filed by us with the SEC. We have not authorized anyone to provide you with different information. This prospectus and the accompanying prospectus supplement do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the securities described in the accompanying prospectus supplement or an offer to sell or the solicitation of an offer to buy such securities in any circumstances in which such offer or solicitation is unlawful. You should assume that the information appearing in this prospectus, any prospectus supplement and the documents incorporated by reference is accurate only as of their respective dates. Our business, financial condition, results of operations and prospects may have changed materially since those dates.

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.

This prospectus may not be used to consummate sales of our securities, unless it is accompanied by a prospectus supplement. To the extent there are inconsistencies between any prospectus supplement, this prospectus and any documents incorporated by reference, the document with the most recent date will control.

The terms “NeuroMetrix,” the “Company,” “we,” “our,” and “us” refer, collectively, to NeuroMetrix, Inc., a Delaware corporation.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the Securities and Exchange Commission, or the SEC. Our SEC filings are available to the public over the Internet at the SEC’s website at <http://www.sec.gov>. Copies of certain information filed by us with the SEC are also available through the Investor Relations section on our website at <http://www.neurometrix.com/investor>. Our website, however, is not a part of this prospectus. You may also read and copy any document we file at the SEC’s public reference room, 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 room.

This prospectus is part of a registration statement we filed with the SEC. This prospectus omits some information contained in the registration statement in accordance with SEC rules and regulations. You should review the information and exhibits in the registration statement for further information on us and the securities we are offering. Statements in this prospectus concerning any document we filed as an exhibit to the registration statement or that we otherwise filed with the SEC are not intended to be comprehensive and are qualified by reference to those filings. You should review the complete document to evaluate these statements.

INCORPORATION OF DOCUMENTS BY REFERENCE

The SEC allows us to “incorporate by reference” much of the information we file with them, which means that we can disclose important information to you by referring you to those publicly available documents. The information that we incorporate by reference in this prospectus is considered to be part of this prospectus. Because we are incorporating by reference future filings with the SEC, this prospectus is continually updated and those future filings may modify or supersede

some of the information included or incorporated in this prospectus. You should refer to the registration statement, including the exhibits, for further information about us and the securities we may offer pursuant to this prospectus. Statements in this prospectus regarding the provisions of certain documents filed with, or incorporated by reference in, the registration statement are not necessarily complete and each statement is qualified in all respects by that reference. This prospectus incorporates by reference the documents listed below (in each case, other than those documents or the portions of those documents not deemed to be filed) until the offering of the securities under the registration statement is terminated or completed:

- Annual Report on Form 10-K for the fiscal year ended December 31, 2018 filed on January 24, 2019;
- Description of our common stock contained in our Registration Statement on Form 8-A filed pursuant to Section 12(g) of the Exchange Act as filed with SEC on July 19, 2004, including any subsequent amendments or reports filed for the purpose of updating such description; and
- Description of our preferred share purchase rights contained in our Registration Statement on Form 8-A filed pursuant to Section 12(b) of the Exchange Act as filed with the SEC on March 8, 2007, including any subsequent amendments or reports filed for the purpose of updating such description; and
- All reports and other documents subsequently filed by us pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act after the date of this prospectus and prior to the termination or completion of the offering of securities under this prospectus shall be deemed to be incorporated by reference in this prospectus and to be a part hereof from the date of filing such reports and other documents.

The SEC file number for each of the documents listed above is 001-33351.

In addition, all reports and other documents filed by us pursuant to the Exchange Act after the date of the initial registration statement and prior to effectiveness of the registration statement shall be deemed to be incorporated by reference into this prospectus.

Any statement contained in this prospectus or in a document incorporated or deemed to be incorporated by reference into this prospectus will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus or any other subsequently filed document that is deemed to be incorporated by reference into this prospectus modifies or supersedes the statement. Any statement so modified or superseded will not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

You should rely only on information contained in, or incorporated by reference into, this prospectus and any prospectus supplement. We have not authorized anyone to provide you with information different from that contained in this prospectus or incorporated by reference in this prospectus. We are not making offers to sell the securities in any jurisdiction in which such an offer or solicitation is not authorized or in which the person making such offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make such offer or solicitation

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

NeuroMetrix, Inc.
1000 Winter Street
Waltham, Massachusetts 02451
(781) 890-9989
Attn: Investor Relations

RISK FACTORS

An investment in our securities involves significant risks. The prospectus supplement applicable to each offering of our securities may contain a discussion of the risks applicable to an investment in NeuroMetrix. You should carefully consider the risk factors contained in any prospectus supplement and in our filings with the SEC, including our Annual Report on Form 10-K for the fiscal year ended December 31, 2018, as revised or supplemented by our subsequent quarterly reports on Form 10-Q or our current reports on Form 8-K on file with the SEC, all of which are incorporated herein by reference, and which may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future. You should also consider the information contained in this prospectus, any prospectus supplement and the documents that we incorporate by reference in this prospectus, before you decide to invest in our securities. The risks and uncertainties we have described are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our operations. The occurrence of any of these risks might cause you to lose all or part of your investment in the offered securities.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents that we incorporate by reference in the prospectus contain statements that are considered “forward-looking statements” within the meaning of the United States securities laws. In addition, NeuroMetrix and its management may make other written or oral communications from time to time that contain forward-looking statements. Forward-looking statements, including statements about industry trends and other matters that do not relate strictly to historical facts, are based on management’s expectations and assumptions, and are often identified by such forward-looking terminology as “expect,” “look,” “believe,” “anticipate,” “estimate,” “seek,” “may,” “will,” “trend,” “target,” and “goal” or similar statements or variations of such terms. Forward-looking statements may include, among other things, statements regarding: projections of revenue, margins, expenses, earnings from operations, cash flows, synergies or other financial items; plans, strategies and objectives of management for future operations, including statements relating to potential acquisitions; developments or performance of our products; future economic conditions or performance; the outcome of outstanding claims or legal proceedings; assumptions underlying any of the foregoing; and any other statements that address activities, events or developments that NeuroMetrix intends, expects, projects, believes or anticipates will or may occur in the future.

Forward-looking statements are subject to various risks and uncertainties, which change over time, are based on management’s expectations and assumptions at the time the statements are made and are not guarantees of future results. These risks and uncertainties include, but are not limited to, statements regarding our or our management’s expectations, hopes, beliefs, intentions or strategies regarding the future, such as our estimates regarding anticipated operating losses, future revenues and projected expenses; our expectations regarding achievement of milestones under the GSK Collaboration; our future liquidity and our expectations regarding our needs for and ability to raise additional capital; our ability to manage our expenses effectively; our belief that there are unmet needs for the management of chronic pain and in the diagnosis and treatment of diabetic neuropathy; our expectations surrounding Quell and DPNCheck; our expected timing and our plans to develop and commercialize our products; our ability to meet our proposed timelines for the commercial availability of our products; our ability to obtain and maintain regulatory approval of our existing products and any future products we may develop; regulatory and legislative developments in the United States and foreign countries; the performance of our third-party manufacturers; our ability to obtain and maintain intellectual property protection for our products; the successful development of our sales and marketing capabilities; the size and growth of the potential markets for our products and our ability to serve those markets; our estimate of our customer returns of our products; the rate and degree of market acceptance of any future products; our reliance on key scientific management or personnel; and other factors specific to NeuroMetrix, as discussed under the heading “Risk Factors” in our Annual Report on Form 10-K for the fiscal year ended December 31, 2018, which has been filed with the SEC and incorporated into this prospectus by reference, as revised or supplemented by our most recent quarterly report on Form 10-Q or our current reports on Form 8-K, as well as any amendments thereto, as filed with the SEC and which are incorporated herein by reference. Our management’s expectations and assumptions, and the continued validity of the forward-looking statements, are subject to change due to a broad range of factors affecting the national and global economies, the equity, debt, currency and other financial markets. We have included important factors in the cautionary statements included and incorporated by reference in this prospectus that we believe could cause actual results or events to differ materially from the forward-looking statements that we make. See the section entitled “Risk Factors” herein for more information. You should consider these factors and other cautionary statements made in this prospectus and in the documents we incorporate by reference as being applicable to all related forward-looking statements wherever they appear in the prospectus and in the documents incorporated by reference.

Therefore, actual outcomes and results may differ materially from what is expressed in our forward-looking statements and from our historical financial results due to factors discussed elsewhere in this prospectus or in our other SEC filings. Forward-looking statements should not be relied upon as representing our expectations or beliefs as of any time subsequent to the time this prospectus is filed with the SEC. Unless specifically indicated, our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments we may make. Unless specifically required by law, we undertake no obligation to revise the forward-looking statements contained in this prospectus to reflect events after the time it is filed with the SEC. The factors discussed elsewhere in this prospectus or in our other SEC filings are not intended to be a complete summary of all risks and uncertainties that may affect our businesses. Though we strive to monitor and mitigate risk, we cannot anticipate all potential economic, operational and financial developments that may adversely affect our operations and our financial results.

Forward-looking statements should not be viewed as predictions, and should not be the primary basis upon which investors evaluate NeuroMetrix. Any investor in NeuroMetrix should consider all risks and uncertainties disclosed in our SEC filings, described above under the Section entitled “Where You Can Find More Information,” all of which are accessible on the SEC’s website at <http://www.sec.gov>. We note that all website addresses given in this prospectus are for information only and are not intended to be an active link or to incorporate any website information into this document.

ABOUT NEUROMETRIX

NeuroMetrix was founded in June 1996 by our President and Chief Executive Officer, Shai N. Gozani, M.D., Ph.D. We originally were incorporated in Massachusetts in 1996, and we reincorporated in Delaware in 2001. NeuroMetrix is a commercial stage, innovation driven healthcare company combining bioelectrical and digital medicine to address chronic health conditions including chronic pain, sleep disorders, and diabetes. Our business is fully integrated with in-house capabilities spanning product development, manufacturing, regulatory affairs and compliance, sales and marketing, and customer support. We derive revenues from the sale of medical devices and after-market consumable products and accessories. Our products are sold in the United States and selected overseas markets, and are cleared by the U.S. Food and Drug Administration, or FDA, and regulators in foreign jurisdictions where appropriate. We have two principal product lines:

- Wearable neuro-stimulation therapeutic devices
- Point-of-care neuropathy diagnostic tests

Our core expertise in biomedical engineering has been refined over two decades of designing, building and marketing medical devices that stimulate nerves and analyze nerve response for diagnostic and therapeutic purposes. We created the market for point-of-care nerve testing and were first to market with sophisticated, wearable technology for management of chronic pain. We have an experienced management team and Board of Directors.

Our common stock is listed on the Nasdaq Capital Market under the ticker symbol "NURO." Our principal offices are located at 1000 Winter Street, Waltham, Massachusetts 02451 and our telephone number is (781) 890-9989. Our web site is www.neurometrix.com. We have not incorporated by reference into this prospectus the information on our website, and you should not consider it to be a part of this document. Our web site address is included in this document as an inactive textual reference only. The NeuroMetrix name and logo and the names of products and services offered by NeuroMetrix are trademarks, registered trademarks, service marks or registered service marks of NeuroMetrix.

USE OF PROCEEDS

We intend to use any net proceeds from the sale of the securities offered hereunder for general corporate purposes unless otherwise indicated in the applicable prospectus supplement. General corporate purposes may include the acquisition of companies or businesses, repayment and refinancing of debt, working capital and capital expenditures. We have not determined the amount of net proceeds to be used specifically for such purposes. As a result, our management will retain broad discretion over the allocation of the net proceeds. Pending application of the net proceeds as described above, we may initially invest the net proceeds in short-term, investment-grade, interest-bearing securities or apply them to the reduction of short-term indebtedness.

PLAN OF DISTRIBUTION

We may offer securities under this prospectus from time to time pursuant to underwritten public offerings, negotiated transactions, block trades or a combination of these methods. We may sell securities:

- through underwriters;
- through dealers;
- through agents;
- directly to purchasers; or
- through a combination of any of these methods of sale.

We may directly solicit offers to purchase securities, or agents may be designated to solicit such offers. We will, in the prospectus supplement relating to such offering, name any agent that could be viewed as an underwriter under the Securities Act of 1933, as amended, or the Securities Act, and describe any commissions that we must pay. Any such agent will be acting on a best efforts basis for the period of its appointment or, if indicated in the applicable prospectus supplement, on a firm commitment basis. Agents, dealers and underwriters may be customers of, engage in transactions with, or perform services for us in the ordinary course of business.

The distribution of the securities may be effected from time to time in one or more transactions:

- at a fixed price, or prices, which may be changed from time to time;
- at market prices prevailing at the time of sale;

- at prices related to such prevailing market prices; or
- at negotiated prices.

Each prospectus supplement will describe the method of distribution of the securities and any applicable restrictions.

The prospectus supplement with respect to the securities of a particular series will describe the terms of the offering of the securities, including the following:

- the name of the agent or any underwriters;
- the public offering or purchase price;
- any discounts and commissions to be allowed or paid to the agent or underwriters;
- all other items constituting underwriting compensation;
- any discounts and commissions to be allowed or paid to dealers; and
- any exchanges on which the securities will be listed.

If any underwriters or agents are utilized in the sale of the securities in respect of which this prospectus is delivered, we will enter into an underwriting agreement or other agreement with them at the time of sale to them, and we will set forth in the prospectus supplement relating to such offering the names of the underwriters or agents and the terms of the related agreement with them.

If a dealer is utilized in the sale of the securities in respect of which the prospectus is delivered, we will sell such securities to the dealer, as principal. The dealer may then resell such securities to the public at varying prices to be determined by such dealer at the time of resale.

Remarketing firms, agents, underwriters and dealers may be entitled under agreements which they may enter into with us to indemnification by us against certain civil liabilities, including liabilities under the Securities Act, and may be customers of, engage in transactions with or perform services for us in the ordinary course of business.

If so indicated in the applicable prospectus supplement, we will authorize underwriters or other persons acting as our agents to solicit offers by certain institutions to purchase securities from us pursuant to delayed delivery contracts providing for payment and delivery on the date stated in the prospectus supplement. Each contract will be for an amount not less than, and the aggregate amount of securities sold pursuant to such contracts shall not be less nor more than, the respective amounts stated in the prospectus supplement. Institutions with whom the contracts, when authorized, may be made include commercial and savings banks, insurance companies, pension funds, investment companies, educational and charitable institutions and other institutions, but shall in all cases be subject to our approval. Delayed delivery contracts will not be subject to any conditions except that:

- the purchase by an institution of the securities covered under that contract shall not at the time of delivery be prohibited under the laws of the jurisdiction to which that institution is subject; and
- if the securities are also being sold to underwriters acting as principals for their own account, the underwriters shall have purchased such securities not sold for delayed delivery. The underwriters and other persons acting as our agents will not have any responsibility in respect of the validity or performance of delayed delivery contracts.

Certain of the underwriters and their associates and affiliates may be customers of, have borrowing relationships with, engage in other transactions with, and/or perform services, including investment banking services, for us or our affiliates in the ordinary course of business.

In order to facilitate the offering of the securities, any underwriters may engage in transactions that stabilize, maintain or otherwise affect the price of the securities or any other securities the prices of which may be used to determine payments on such securities. Specifically, any underwriters may overallocate in connection with the offering, creating a short position for their own accounts. In addition, to cover overallocations or to stabilize the price of the securities or of any such other securities, the underwriters may bid for, and purchase, the securities or any such other securities in the open market. Finally, in any offering of the securities through a syndicate of underwriters, the underwriting syndicate may reclaim selling concessions allowed to an underwriter or a dealer for distributing the securities in the offering if the syndicate repurchases previously distributed securities in transactions to cover syndicate short positions, in stabilization transactions or otherwise. Any of these activities may stabilize or maintain the market price of the securities above independent market levels. Any such underwriters are not required to engage in these activities and may end any of these activities at any time.

The securities may be new issues of securities and may have no established trading market. The securities may or may not be listed on a national securities exchange. We can make no assurance as to the liquidity of or the existence of trading markets for any of the securities.

DESCRIPTION OF SECURITIES TO BE OFFERED

The descriptions of the securities contained in this prospectus, together with the applicable prospectus supplements, summarize the material terms and provisions of the various types of securities that we may offer. We will describe in the applicable prospectus supplement relating to any securities the particular terms of the securities offered by that prospectus supplement. If we so indicate in the applicable prospectus supplement, the terms of the securities may differ from the terms we have summarized below. We will also include in the prospectus supplement information, where applicable, about material U.S. federal income tax considerations relating to the securities, and the securities exchange, if any, on which the securities will be listed.

We may sell from time to time, in one or more primary offerings, our common stock, preferred stock, warrants, or rights, or any combination of the foregoing.

In this prospectus, we refer to the common stock, preferred stock, warrants, or rights, or any combination of the foregoing securities to be sold by us in a primary offering collectively as “securities.” The total dollar amount of all securities that we may issue under this prospectus will not exceed \$25,000,000.

This prospectus may not be used to consummate a sale of securities unless it is accompanied by a prospectus supplement.

DESCRIPTION OF CAPITAL STOCK

The following description of our securities is intended as a summary only and is qualified in its entirety by reference to our amended and restated certificate of incorporation and amended and restated bylaws, which are filed as exhibits to the registration statement of which the prospectus forms a part, and to the applicable provisions of the Delaware General Corporation Law. We refer in this section to our amended and restated certificate of incorporation as our certificate of incorporation, and we refer to our amended and restated bylaws as our bylaws.

Authorized Capitalization

Our authorized capital stock consists of 100,000,000 shares of common stock, \$0.0001 par value per share, and 5,000,000 shares of preferred stock, par value \$0.001 per share, in one or more series. As of January 23, 2019, we had outstanding 7,680,463 shares of our common stock, 200 shares of our Series B convertible preferred stock, 14,052.93 shares of our Series D convertible preferred stock, 2,471.70 shares of our Series E convertible preferred stock and no shares of our Series A-1, A-2, A-3, A-4, C, or F convertible preferred stock. At that date, we also had an aggregate of 494,101 shares of common stock reserved for issuance upon exercise of outstanding stock options granted under our stock incentive plans, and an aggregate of 459,375 shares of common stock reserved for issuance upon the exercise of outstanding warrants to purchase common stock.

Transfer Agent and Registrar. The transfer agent for our common stock and outstanding shares of preferred stock is American Stock Transfer & Trust Company.

Common Stock

The holders of our common stock are generally entitled to one vote for each share held on all matters submitted to a vote of the stockholders and do not have any cumulative voting rights. Except as may be required by law and in connection with some significant actions, such as mergers, consolidations, or amendments to our certificate of incorporation that affect the rights of stockholders, holders of our common stock vote together as a single class. There is no cumulative voting in the election of our directors, which means that, subject to any rights to elect directors that are granted to the holders of any class or series of preferred stock, a plurality of the votes cast at a meeting of stockholders at which a quorum is present is sufficient to elect a director. Holders of our common stock are entitled to receive proportionally any dividends declared by our Board of Directors, subject to any preferential dividend rights of outstanding preferred stock.

Subject to the preferential rights of any other class or series of stock, all shares of our common stock have equal dividend, distribution, liquidation and other rights, and have no preference, appraisal or exchange rights, except for any appraisal rights provided by Delaware law. Furthermore, holders of our common stock have no conversion, sinking fund or redemption rights, or preemptive rights to subscribe for any of our securities. Our certificate of incorporation and bylaws do not restrict the ability of a holder of our common stock to transfer his or her shares of our common stock.

In the event of our liquidation or dissolution, holders of our common stock are entitled to share ratably in all assets remaining after payment of all debts and other liabilities, subject to the prior rights of any outstanding preferred stock. Holders of our common stock have no preemptive, subscription, redemption or conversion rights. The common stock, when issued, will be duly authorized, fully paid and nonassessable.

Preferred Stock

Pursuant to our certificate of incorporation, we are authorized to issue “blank check” preferred stock, which may be issued from time to time in one or more series upon authorization by our Board of Directors. Our Board of Directors, without further approval of the stockholders, is authorized to fix the designations, powers, including voting powers, preferences and the relative, participating, optional or other special rights of the shares of each series and any qualifications, limitations and restrictions thereof. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes could, among other things, adversely affect the voting power or other rights of the holders of our common stock and, under certain circumstances, make it more difficult for a third party to gain control of us, discourage bids for our common stock at a premium or otherwise adversely affect the market price of the common stock.

The preferred stock will have the terms described below unless otherwise provided in the prospectus supplement relating to a particular series of the preferred stock. You should read the prospectus supplement relating to the particular series of the preferred stock being offered for the specific terms of that series, including:

- the designation and stated value per share of the preferred stock and the number of shares offered;
- the amount of liquidation preference per share, if any;
- the price at which the preferred stock will be issued;
- the dividend rate, or method of calculation of the dividend rate, if any, the dates on which dividends will be payable, whether dividends will be cumulative or noncumulative and, if cumulative, the dates from which dividends will commence to accumulate;
- any redemption or sinking fund provisions;
- if other than the currency of the United States, the currency or currencies, including composite currencies, in which the preferred stock is denominated and/or in which payments will or may be payable;
- any conversion provisions; and
- any other rights, preferences, privileges, limitations and restrictions on the preferred stock.

The preferred stock will, when issued, be duly authorized, fully paid and nonassessable. Unless otherwise specified in the prospectus supplement, each series of the preferred stock will rank equally as to dividends and liquidation rights in all respects with each other series of preferred stock. The rights of holders of shares of each series of preferred stock will be subordinate to those of our general creditors.

Rank. Unless otherwise specified in the prospectus supplement, the preferred stock will, with respect to dividend rights and rights upon our liquidation, dissolution or winding up our affairs, rank:

- senior to all classes or series of our common stock and to all equity securities ranking junior to such preferred stock with respect to dividend rights or rights upon our liquidation, dissolution or winding up our affairs;
- on a parity with all equity securities issued by us, the terms of which specifically provide that such equity securities rank on a parity with the preferred stock with respect to dividend rights or rights upon our liquidation, dissolution or winding up of our affairs; and
- junior to all equity securities issued by us, the terms of which specifically provide that such equity securities rank senior to the preferred stock with respect to dividend rights or rights upon our liquidation, dissolution or winding up of our affairs.

The term “equity securities” does not include convertible debt securities.

Dividends. Holders of the preferred stock of each series will be entitled to receive, when, as and if declared by our board of directors, cash dividends at such rates and on such dates described in the prospectus supplement. Different series of preferred stock may be entitled to dividends at different rates or based on different methods of calculation. The dividend rate may be fixed or variable or both. Dividends will be payable to the holders of record as they appear on our stock books on record dates fixed by our board of directors, as specified in the applicable prospectus supplement.

Dividends on any series of the preferred stock may be cumulative or noncumulative, as described in the applicable prospectus supplement. If our board of directors does not declare a dividend payable on a dividend payment date on any series of noncumulative preferred stock, then the holders of that noncumulative preferred stock will have no right to receive a dividend for that dividend payment date, and we will have no obligation to pay the dividend accrued for that period, whether or not dividends on that series are declared payable on any future dividend payment dates. Dividends on any series of cumulative preferred stock will accrue from the date we initially issue shares of such series or such other date specified in the applicable prospectus supplement.

No full dividends may be declared or paid or funds set apart for the payment of any dividends on any parity securities unless dividends have been paid or set apart for payment on the preferred stock. If full dividends are not paid, the preferred stock will share dividends pro rata with the parity securities.

No dividends may be declared or paid or funds set apart for the payment of dividends on any junior securities unless full cumulative dividends for all dividend periods terminating on or prior to the date of the declaration or payment will have been paid or declared and a sum sufficient for the payment set apart for payment on the preferred stock.

Liquidation Preference. Upon any voluntary or involuntary liquidation, dissolution or winding up of our affairs, then, before we make any distribution or payment to the holders of any common stock or any other class or series of our capital stock ranking junior to the preferred stock in the distribution of assets upon any liquidation, dissolution or winding up of our affairs, the holders of each series of preferred stock shall be entitled to receive out of assets legally available for distribution to stockholders, liquidating distributions in the amount of the liquidation preference per share set forth in the applicable prospectus supplement, plus any accrued and unpaid dividends thereon. Such dividends will not include any accumulation in respect of unpaid noncumulative dividends for prior dividend periods. Unless otherwise specified in the prospectus supplement, after payment of the full amount of their liquidating distributions, the holders of preferred stock will have no right or claim to any of our remaining assets. Upon any such voluntary or involuntary liquidation, dissolution or winding up, if our available assets are insufficient to pay the amount of the liquidating distributions on all outstanding preferred stock and the corresponding amounts payable on all other classes or series of our capital stock ranking on parity with the preferred stock and all other such classes or series of shares of capital stock ranking on parity with the preferred stock in the distribution of assets, then the holders of the preferred stock and all other such classes or series of capital stock will share ratably in any such distribution of assets in proportion to the full liquidating distributions to which they would otherwise be entitled.

Upon any liquidation, dissolution or winding up, and if we have made liquidating distributions in full to all holders of preferred stock, we will distribute our remaining assets among the holders of any other classes or series of capital stock ranking junior to the preferred stock according to their respective rights and preferences and, in each case, according to their respective number of shares. For such purposes, our consolidation or merger with or into any other corporation, trust or entity, or the sale, lease or conveyance of all or substantially all of our property or business will not be deemed to constitute a liquidation, dissolution or winding up of our affairs.

Redemption. If so provided in the applicable prospectus supplement, the preferred stock will be subject to mandatory redemption or redemption at our option, as a whole or in part, in each case upon the terms, at the times and at the redemption prices set forth in such prospectus supplement.

The prospectus supplement relating to a series of preferred stock that is subject to mandatory redemption will specify the number of shares of preferred stock that shall be redeemed by us in each year commencing after a date to be specified, at a redemption price per share to be specified, together with an amount equal to all accrued and unpaid dividends thereon to the date of redemption. Unless the shares have a cumulative dividend, such accrued dividends will not include any accumulation in respect of unpaid dividends for prior dividend periods. We may pay the redemption price in cash or other property, as specified in the applicable prospectus supplement. If the redemption price for preferred stock of any series is payable only from the net proceeds of the issuance of shares of our capital stock, the terms of such preferred stock may provide that, if no such shares of our capital stock shall have been issued or to the extent the net proceeds from any issuance are insufficient to pay in full the aggregate redemption price then due, such preferred stock shall automatically and mandatorily be converted into the applicable shares of our capital stock pursuant to conversion provisions specified in the applicable prospectus supplement.

Notwithstanding the foregoing, we will not redeem any preferred stock of a series unless:

- if that series of preferred stock has a cumulative dividend, we have declared and paid or contemporaneously declare and pay or set aside funds to pay full cumulative dividends on the preferred stock for the past and current dividend period; or
- if such series of preferred stock does not have a cumulative dividend, we have declared and paid or contemporaneously declare and pay or set aside funds to pay full dividends for the current dividend period.

In addition, we will not acquire any preferred stock of a series unless:

- if that series of preferred stock has a cumulative dividend, we have declared and paid or contemporaneously declare and pay or set aside funds to pay full cumulative dividends on all outstanding shares of such series of preferred stock for all past dividend periods and the then current dividend period; or
- if that series of preferred stock does not have a cumulative dividend, we have declared and paid or contemporaneously declare and pay or set aside funds to pay full dividends on the preferred stock of such series for the then current dividend period.

However, at any time we may purchase or acquire preferred stock of that series (1) pursuant to a purchase or exchange offer made on the same terms to holders of all outstanding preferred stock of such series or (2) by conversion into or exchange for shares of our capital stock ranking junior to the preferred stock of such series as to dividends and upon liquidation.

If fewer than all of the outstanding shares of preferred stock of any series are to be redeemed, we will determine the number of shares that may be redeemed pro rata from the holders of record of such shares in proportion to the number of such shares held or for which redemption is requested by such holder or by any other equitable manner that we determine. Such determination will reflect adjustments to avoid redemption of fractional shares.

Unless otherwise specified in the prospectus supplement, we will mail notice of redemption at least 30 days but not more than 60 days before the redemption date to each holder of record of preferred stock to be redeemed at the address shown on our stock transfer books. Each notice shall state:

- the redemption date;
- the number of shares and series of the preferred stock to be redeemed;
- the redemption price;
- the place or places where certificates for such preferred stock are to be surrendered for payment of the redemption price;
- that dividends on the shares to be redeemed will cease to accrue on such redemption date;
- the date upon which the holder's conversion rights, if any, as to such shares shall terminate; and
- the specific number of shares to be redeemed from each such holder if fewer than all the shares of any series are to be redeemed.

If notice of redemption has been given and we have set aside the funds necessary for such redemption in trust for the benefit of the holders of any shares so called for redemption, then from and after the redemption date, dividends will cease to accrue on such shares, and all rights of the holders of such shares will terminate, except the right to receive the redemption price.

Voting Rights. Holders of preferred stock will not have any voting rights, except as described in the next paragraph, as otherwise from time to time required by law or as indicated in the applicable prospectus supplement.

Unless otherwise provided for any series of preferred stock, so long as any preferred stock of a series remains outstanding, we will not, without the affirmative vote or consent of the holders of at least two-thirds of the preferred stock of such series outstanding at the time, given in person or by proxy, either in writing or at a meeting with each of such series voting separately as a class:

- authorize, or create, or increase the authorized or issued amount of, any class or series of shares of capital stock ranking senior to such series of preferred stock with respect to payment of dividends or the distribution of assets upon liquidation, dissolution or winding up, or reclassify any of our authorized shares of capital stock into such shares, or create, authorize or issue any obligation or security convertible into or evidencing the right to purchase any such shares; or
- amend, alter or repeal the provisions of our restated certificate or the amendment to our certificate of incorporation designating the terms for such series of preferred stock, whether by merger, consolidation or otherwise, so as to materially and adversely affect any right, preference, privilege or voting power of such series of preferred stock or the holders thereof.

Notwithstanding the preceding bullet point, if the preferred stock remains outstanding with the terms thereof materially unchanged, the occurrence of any of the events described above shall not be deemed to materially and adversely affect the rights, preferences, privileges or voting power of holders of preferred stock, even if upon the occurrence of such an event we may not be the surviving entity. In addition, any increase in the amount of (1) authorized preferred stock or the creation or issuance of any other series of preferred stock, or (2) authorized shares of such series or any other series of preferred stock, in each case ranking on parity with or junior to the preferred stock of such series with respect to payment of dividends or the distribution of assets upon liquidation, dissolution or winding up, shall not be deemed to materially and adversely affect such rights, preferences, privileges or voting powers.

The foregoing voting provisions will not apply if, at or prior to the time when the act with respect to which such vote would otherwise be required will be effected, we have redeemed or called for redemption all outstanding shares of such series of preferred stock and, if called for redemption, have deposited sufficient funds in trust to effect such redemption.

Conversion Rights. The terms and conditions, if any, upon which any series of preferred stock is convertible into common stock will be set forth in the applicable prospectus supplement relating thereto. Such terms will include the number of shares of common stock into which the shares of preferred stock are convertible, the conversion price, rate or manner of calculation

thereof, the conversion period, provisions as to whether conversion will be at our option or at the option of the holders of the preferred stock, the events requiring an adjustment of the conversion price and provisions affecting conversion in the event of the redemption.

Transfer Agent and Registrar. The transfer agent and registrar for the preferred stock will be set forth in the applicable prospectus supplement.

Series B Convertible Preferred Stock Outstanding

As of January 23, 2019, we had 200 shares of our Series B convertible preferred stock with a stated value of \$100 outstanding. The Series B convertible preferred stock is convertible at the option of the holder into the number of shares of common stock determined by dividing the stated value by the adjusted conversion price of \$33.33, which is subject to adjustment as provided in the Certificate of Designation for the Series B Preferred Stock, subject to a 9.99% ownership limitation. The Series B convertible preferred stock has no dividend rights, liquidation preference or other preferences over common stock and has no voting rights except as provided in the Certificate of Designation, as filed with the Secretary of State of the State of Delaware, or as otherwise required by law. You should refer to the certificate of designation of preferences, rights and limitations of Series B convertible preferred stock, which is included as exhibit to the registration statement of which this prospectus is a part.

Series D Convertible Preferred Stock Outstanding

As of January 23, 2019, we had 14,052.93 shares of our Series D convertible preferred stock with a stated value of \$1,000 outstanding. The Series D convertible preferred stock is convertible at the option of the holder into the number of shares of common stock determined by dividing the stated value by the adjusted conversion price of \$2.63, which is subject to adjustment as provided in the Certificate of Designation for the Series D Preferred Stock, subject to a 9.99% ownership limitation. The Series D convertible preferred stock has no dividend rights, liquidation preference or other preferences over common stock and has no voting rights except as provided in the Certificate of Designation, as filed with the Secretary of State of the State of Delaware, or as otherwise required by law. You should refer to the certificate of designation of preferences, rights and limitations of Series D convertible preferred stock, which is included as exhibit to the registration statement of which this prospectus is a part.

Series E Convertible Preferred Stock Outstanding

As of January 23, 2019, we had 2,471.70 shares of our Series E convertible preferred stock with a stated value of \$1,000 outstanding. The Series E convertible preferred stock is convertible at the option of the holder into the number of shares of common stock determined by dividing the stated value by the adjusted conversion price of \$2.63, which is subject to adjustment as provided in the Certificate of Designation for the Series E Preferred Stock, subject to a 9.99% ownership limitation. The Series E convertible preferred stock has no dividend rights, liquidation preference or other preferences over common stock and has no voting rights except as provided in the Certificate of Designation, as filed with the Secretary of State of the State of Delaware, or as otherwise required by law. You should refer to the certificate of designation of preferences, rights and limitations of Series E convertible preferred stock, which is included as exhibit to the registration statement of which this prospectus is a part.

Warrants Outstanding

As of January 23, 2019, we had warrants outstanding to purchase 459,375 shares of common stock at a weighted average exercise price of \$40.00 per share. These warrants were issued in May 2015 and have a five-year term.

Shareholder Rights Plan

On March 7, 2007, we entered into a Rights Agreement with American Stock Transfer & Trust Company, as rights agent, and approved the declaration of a dividend distribution of one preferred share purchase right on each outstanding share of our common stock to shareholders of record as of the close of business on June 8, 2007. Each right entitles the registered holder to purchase from us 0.1152 of a share of our Series A Junior Convertible Preferred Stock at a price of \$75.00, subject to adjustment.

Initially, the rights are not exercisable and are attached to and trade with all shares of common stock outstanding as of, and issued subsequent to March 8, 2007. The rights will separate from the common stock and will become exercisable upon the earlier of (i) the close of business on the tenth calendar day following the first public announcement that a person or group of affiliated or associated persons, or an Acquiring Person, has acquired beneficial ownership of 15% or more of the outstanding shares of common stock, other than as a result of repurchases of stock by the Company or certain inadvertent actions by a shareholder or (ii) the close of business on the tenth business day (or such later day as our Board of Directors may determine) following the commencement of a tender offer or exchange offer that could result upon its consummation in a person or group becoming the beneficial owner of 15% or more of the outstanding shares of common stock.

The rights may be redeemed in whole, but not in part, at a price of \$0.01 per right (payable in cash, common stock or other consideration deemed appropriate by our board) by the board only until the earlier of (i) the time at which any person becomes an Acquiring Person or (ii) the expiration date of the Rights Agreement. Immediately upon the action of the board ordering redemption of the rights, the rights will terminate and thereafter the only right of the holders of rights will be to receive the redemption price.

The rights will expire on March 8, 2019, unless previously redeemed or exchanged by the Company. The rights distribution was not taxable to stockholders.

The above summary of the Rights Agreement does not purport to be complete. You should refer to the Rights Agreement, as amended, which is included as an exhibit to the registration statement of which this prospectus is a part.

Certain Effects of Authorized but Unissued Stock

We have shares of common stock and preferred stock available for future issuance without stockholder approval. We may issue these additional shares for a variety of corporate purposes, including future public offerings to raise additional capital or facilitate corporate acquisitions or for payment as a dividend on our capital stock. The existence of unissued and unreserved common stock and preferred stock may enable our board of directors to issue shares to persons friendly to current management or to issue preferred stock with terms that could render more difficult or discourage a third-party attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise, thereby protecting the continuity of our management. In addition, if we issue preferred stock, the issuance could adversely affect the voting power of holders of common stock and the likelihood that such holders will receive dividend payments and payments upon liquidation.

Delaware Law and Certificate of Incorporation and Bylaws Provisions

Board of Directors. Our certificate of incorporation provides that:

- our Board of Directors is divided into three classes, as nearly equal in number as possible, to serve staggered terms so that approximately one-third of our board will be elected each year;
- subject to the rights of the holders of any class or series of preferred stock then outstanding, our directors may be removed (i) only with cause and (ii) only by the affirmative vote of the holders of at least seventy-five percent (75%) of the voting power of all of the then outstanding shares then entitled to vote at an election of directors voting together as a single class, unless otherwise specified by law; and
- any vacancy on our Board of Directors, however occurring, including a vacancy resulting from an enlargement of the board, may only be filled by vote of a majority of the directors then in office, even if less than a quorum, or by a sole remaining director, and not by the stockholders.

These provisions could discourage, delay or prevent a change in control of our company or an acquisition of our company at a price which many stockholders may find attractive. The existence of these provisions could limit the price that investors might be willing to pay in the future for shares of our common stock. These provisions may also have the effect of discouraging a third party from initiating a proxy contest, making a tender offer or attempting to change the composition or policies of our Board of Directors.

Stockholder Action; Special Meeting of Stockholders. Our certificate of incorporation and bylaws also provide that:

- stockholder action may be taken only at a duly called and convened annual or special meeting of stockholders and then only if properly brought before the meeting;
- stockholder action may not be taken by written action in lieu of a meeting;
- special meetings of stockholders may be called only by our Board of Directors pursuant to a resolution approved by the affirmative vote of a majority of the directors then in office; and
- in order for any matter to be considered “properly brought” before a meeting, a stockholder must comply with requirements regarding specified information and advance notice to us.

These provisions could delay, until the next stockholders’ meeting, actions which are favored by the holders of a majority of our outstanding voting securities. These provisions may also discourage another person or entity from making a tender offer for our common stock, because a person or entity, even if it acquired a majority of our outstanding voting securities, would be able to take action as a stockholder only at a duly called stockholders’ meeting, and not by written consent.

Provisions of Delaware Law Governing Business Combinations. We are subject to the “business combination” provisions of Section 203 of the Delaware General Corporation Law. In general, such provisions prohibit a publicly held Delaware

corporation from engaging in any “business combination” transactions with any “interested stockholder” for a period of three years after the date on which the person became an “interested stockholder,” unless:

- prior to such date, the board of directors approved either the “business combination” or the transaction which resulted in the “interested stockholder” obtaining such status; or
- upon consummation of the transaction which resulted in the stockholder becoming an “interested stockholder,” the “interested stockholder” owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding (but not the outstanding voting stock owned by the “interested stockholder”) those shares owned by (a) persons who are directors and also officers and (b) employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- at or subsequent to such time the “business combination” is approved by the board of directors and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock which is not owned by the “interested stockholder.”

A “business combination” is defined to include mergers, asset sales and other transactions resulting in financial benefit to a stockholder. In general, an “interested stockholder” is a person who, together with affiliates and associates, owns 15% or more of a corporation’s voting stock or within three years did own 15% or more of a corporation’s voting stock. The statute could prohibit or delay mergers or other takeover or change in control attempts with respect to us and, accordingly, may discourage attempts to acquire us.

Indemnification. Our restated certificate provides that no director of our company shall be personally liable for any monetary damages for any breach of fiduciary duty as a director, except for liability (i) for any breach of the director’s duty of loyalty to the company or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the General Corporation Law of the State of Delaware, or (iv) for any transaction from which the director derived an improper personal benefit. Our restated certificate also provides that if the General Corporation Law of the State of Delaware is amended to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of our company shall be eliminated or limited to the fullest extent permitted by the General Corporation Law of the State of Delaware, as so amended. The restated certificate further provides that no amendment to or repeal of these provisions shall apply to or have any effect on the liability or alleged liability of any director for or with respect to any acts or omissions of such director occurring prior to such amendment or repeal. Our restated certificate further provides for the indemnification of our directors and officers to the fullest extent permitted by Section 145 of the Delaware General Corporation Law, including circumstances in which indemnification is otherwise discretionary.

DESCRIPTION OF WARRANTS

We may issue warrants to purchase preferred stock or common stock. We may offer warrants separately or together with one or more additional warrants, preferred stock, common stock, rights, or any combination of those securities in the form of units, as described in the applicable prospectus supplement. If we issue warrants as part of a unit, the accompanying prospectus supplement will specify whether those warrants may be separated from the other securities in the unit prior to the warrants’ expiration date. Below is a description of certain general terms and provisions of the warrants that we may offer. Further terms of the warrants will be described in the prospectus supplement.

The applicable prospectus supplement will describe the following terms of any warrants in respect of which this prospectus is being delivered:

- the specific designation and aggregate number of, and the price at which we will issue, the warrants;
- the currency or currency units in which the offering price, if any, and the exercise price are payable;
- the date on which the right to exercise the warrants will begin and the date on which that right will expire or, if you may not continuously exercise the warrants throughout that period, the specific date or dates on which you may exercise the warrants;
- whether the warrants will be issued in fully registered form or bearer form, in definitive or global form or in any combination of these forms;
- any applicable material U.S. federal income tax consequences;
- the identity of the warrant agent for the warrants and of any execution or paying agents, transfer agents, registrars or other agents;

- the proposed listing, if any, of the warrants or any securities purchasable upon exercise of the warrants on any securities exchange;
- the designation and terms of the equity securities purchasable upon exercise of the warrants;
- if applicable, the designation and terms of the preferred stock, common stock, or rights, with which the warrants are issued and, the number of warrants issued with each security;
- if applicable, the date from and after which the warrants and the related preferred stock, common stock, or rights will be separately transferable;
- the number of shares of preferred stock or common stock purchasable upon exercise of a warrant and the price at which those shares may be purchased;
- if applicable, the minimum or maximum amount of the warrants that may be exercised at any one time;
- information with respect to book-entry procedures, if any;
- the antidilution provisions of the warrants, if any;
- any redemption or call provisions; and
- any additional terms of the warrants, including terms, procedures and limitations relating to the exchange and exercise of the warrants.

DESCRIPTION OF RIGHTS

We may issue rights to our stockholders to purchase shares of our common stock or preferred stock. We may offer rights separately or together with one or more additional rights, preferred stock, common stock, or warrants, or any combination of those securities in the form of units, as described in the applicable prospectus supplement. Each series of rights will be issued under a separate rights agreement to be entered into between us and a bank or trust company, as rights agent. The rights agent will act solely as our agent in connection with the certificates relating to the rights of the series of certificates and will not assume any obligation or relationship of agency or trust for or with any holders of rights certificates or beneficial owners of rights. The following description sets forth certain general terms and provisions of the rights to which any prospectus supplement may relate. The particular terms of the rights to which any prospectus supplement may relate and the extent, if any, to which the general provisions may apply to the rights so offered will be described in the applicable prospectus supplement. To the extent that any particular terms of the rights, rights agreement or rights certificates described in a prospectus supplement differ from any of the terms described below, then the terms described below will be deemed to have been superseded by that prospectus supplement. We encourage you to read the applicable rights agreement and rights certificate for additional information before you decide whether to purchase any of our rights.

We will provide in a prospectus supplement the following terms of the rights being issued:

- the date of determining the stockholders entitled to the rights distribution;
- the aggregate number of shares of common stock or preferred stock purchasable upon exercise of the rights;
- the exercise price;
- the aggregate number of rights issued;
- the date, if any, on and after which the rights will be separately transferable;
- the date on which the right to exercise the rights will commence, and the date on which the right will expire;
- the method by which holders of rights will be entitled to exercise;
- the conditions to the completion of the offering, if any;
- the withdrawal, termination and cancellation rights, if any;
- any applicable federal income tax considerations; and
- any other terms of the rights, including terms, procedures and limitations relating to the distribution, exchange and exercise of the rights.

Each right will entitle the holder of rights to purchase for cash the principal amount of shares of common stock or preferred stock at the exercise price provided in the applicable prospectus supplement. Rights may be exercised at any time up to the close of business on the expiration date for the rights provided in the applicable prospectus supplement.

Holders may exercise rights as described in the applicable prospectus supplement. Upon receipt of payment and the rights certificate properly completed and duly executed at the corporate trust office of the rights agent or any other office indicated in the prospectus supplement, we will, as soon as practicable, forward the shares of common stock or preferred stock, as applicable, purchasable upon exercise of the rights. If less than all of the rights issued in any rights offering are exercised, we may offer any unsubscribed securities directly to persons other than stockholders, to or through agents, underwriters or dealers or through a combination of such methods, including pursuant to standby arrangements, as described in the applicable prospectus supplement.

LEGAL MATTERS

Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., Boston, Massachusetts, will pass upon the validity of the issuance of the securities offered by this prospectus for us.

EXPERTS

The financial statements incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2018 have been so incorporated in reliance on the report (which contains an explanatory paragraph relating to the Company’s ability to continue as a going concern as described in Note 1 to the financial statements) of Moody, Famiglietti, and Andronico LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

\$25,000,000

**Common Stock
Preferred Stock
Warrants
Rights**

**PROSPECTUS
, 2019**

PART II.
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution

SEC registration fee	\$	3,030
Printing and engraving		*
Accounting services		*
Legal fees of registrant's counsel		*
Miscellaneous		*
Total	\$	3,030

***Except for the SEC registration fee, fees depend on number of issuances and amount of securities sold and accordingly cannot be estimated at this time.**

Item 15. Indemnification of Directors and Officers

Our amended and restated certificate of incorporation provides that we shall indemnify, to the fullest extent authorized by the Delaware General Corporation Law, each person who is involved in any litigation or other proceeding because such person is or was our director or officer or is or was serving as an officer or director of another entity at our request, against all expense, loss or liability reasonably incurred or suffered in connection therewith. Our amended and restated certificate of incorporation provides that the right to indemnification includes the right to be paid expenses incurred in defending any proceeding in advance of its final disposition, provided, however, that such advance payment will only be made upon delivery to us of an undertaking, by or on behalf of the director or officer, to repay all amounts so advanced if it is ultimately determined that such director is not entitled to indemnification. If we do not pay a proper claim for indemnification in full within 10 days after we receive a written claim for such indemnification, our amended and restated certificate of incorporation and our restated bylaws authorize the claimant to bring an action against us and prescribe what constitutes a defense to such action.

Section 145 of the Delaware General Corporation Law permits a corporation to indemnify any director or officer of the corporation against expenses (including attorney's fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with any action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in right of the corporation) brought by reason of the fact that such person is or was a director or officer of the corporation, if such person acted in good faith and in a manner that he reasonably believed to be in, or not opposed to, the best interests of the corporation, and, with respect to any criminal action or proceeding, if he or she had no reason to believe his or her conduct was unlawful. In a derivative action, (i.e., one brought by or on behalf of the corporation), indemnification may be provided only for expenses actually and reasonably incurred by any director or officer in connection with the defense or settlement of such an action or suit if such person acted in good faith and in a manner that he or she reasonably believed to be in, or not opposed to, the best interests of the corporation, except that no indemnification shall be provided if such person shall have been adjudged to be liable to the corporation, unless and only to the extent that the court in which the action or suit was brought shall determine that the defendant is fairly and reasonably entitled to indemnity for such expenses despite such adjudication of liability.

Pursuant to Section 102(b)(7) of the Delaware General Corporation Law, Article Seventh of our amended and restated certificate of incorporation eliminates the liability of a director to us or our stockholders for monetary damages for such a breach of fiduciary duty as a director, except for liabilities arising:

- from any breach of the director's duty of loyalty to us or our stockholders;
- from acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law;
- under Section 174 of the Delaware General Corporation Law; and
- from any transaction from which the director derived an improper personal benefit.
-

- As permitted by Section 145 of the Delaware General Corporation Law, we carry insurance policies insuring our directors and officers against certain liabilities that they may incur in their capacity as directors and officers.

Any underwriting agreements that we may enter into will likely provide for the indemnification of us, our controlling persons, our directors and certain of our officers by the underwriters against certain liabilities, including liabilities under the Securities Act of 1933, as amended.

Item 16. Exhibits

The exhibits listed in the accompanying Exhibit Index are filed or incorporated by reference as part of this registration statement.

Item 17. Undertakings

(a) The undersigned registrant hereby undertakes:

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

(i) to include any prospectus required by Section 10(a)(3) of the Securities Act of 1933, as amended (the “Securities Act of 1933”);

(ii) to reflect in the prospectus any facts or events arising after the effective date of this registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in this registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent change in the maximum aggregate offering price set forth in the “Calculation of Registration Fee” table in the effective registration statement;

(iii) to include any material information with respect to the plan of distribution not previously disclosed in this registration statement or any material change to such information in this registration statement;

provided, however, that paragraphs (1)(i), (1)(ii) and (1)(iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), that are incorporated by reference in this 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 the time shall be deemed to be the initial *bona fide* offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:

(i) each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof. *Provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a

purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

(5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities:

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

- (i) any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
- (ii) any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
- (iii) the portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
- (iv) any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to section 13(a) or section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof..

(c) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Waltham, Massachusetts on January 24, 2019.

NeuroMetrix, Inc.

By: /s/ SHAI N. GOZANI, M.D. PH.D.
Name: Shai N. Gozani, M.D., Ph.D.
Title: Chairman, President and Chief Executive Officer

SIGNATURES AND POWER OF ATTORNEY

We, the undersigned officers and directors of NeuroMetrix, Inc. hereby severally constitute and appoint Shai N. Gozani, M.D., Ph.D. and Thomas T. Higgins, and each of them singly, our true and lawful attorneys with full power to any of them, and to each of them singly, to sign for us and in our names in the capacities indicated below the Registration Statement on Form S-3 filed herewith and any and all amendments to said Registration Statement and generally to do all such things in our name and behalf in our capacities as officers and directors to enable NeuroMetrix, Inc. to comply with the provisions of the Securities Act of 1933, as amended, and all requirements of the Securities and Exchange Commission, hereby ratifying and confirming our signatures as they may be signed by our said attorneys, or any of them, to said Registration Statement and any and all amendments thereto.

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ SHAI N. GOZANI, M.D. PH.D.</u> Shai N. Gozani, M.D., Ph.D.	Chairman, President and Chief Executive Officer (principal executive officer)	January 24, 2019
<u>/s/ THOMAS T. HIGGINS</u> Thomas T. Higgins	Senior Vice President, Chief Financial Officer and Treasurer (principal financial officer and principal accounting officer)	January 24, 2019
<u>/s/ DAVID E. GOODMAN, M.D.</u> David E. Goodman, M.D.	Director	January 24, 2019
<u>/s/ NANCY E. KATZ</u> Nancy E. Katz	Director	January 24, 2019
<u>/s/ TIMOTHY R. SURGENOR</u> Timothy R. Surgenor	Director	January 24, 2019
<u>/s/ DAVID VAN AVERMAETE</u> David Van Avermaete	Director	January 24, 2019

EXHIBIT INDEX

Exhibit Number	Exhibit Description	Filed with this Report	Incorporated by Reference herein from Form or Schedule	Filing Date	SEC File / Registration Number
1.1	Underwriting Agreement		**		
4.1	Third Amended and Restated Certificate of Incorporation of NeuroMetrix, Inc. dated July 27, 2004		S-8 (Exhibit 4.1)	8/9/2004	333-118059
4.2	Certificate of Designations for Series A Junior Cumulative Preferred Stock, par value \$0.001 per share, dated March 7, 2007		8-A12(b) (Exhibit 3.1)	3/8/2007	001-33351
4.3	Certificate of Amendment to Restated Certificate of Incorporation of NeuroMetrix, Inc. dated September 1, 2011		8-K (Exhibit 3.1)	9/1/2011	001-33351
4.3	Certificate of Amendment to Restated Certificate of Incorporation of NeuroMetrix, Inc. dated February 15, 2013		8-K (Exhibit 3.1)	2/15/2013	001-33351
4.4	Certificate of Amendment to Restated Certificate of Incorporation of NeuroMetrix, Inc. dated December 1, 2015		8-K (Exhibit 3.1)	12/1/2015	001-33351
4.5	Certificate of Designation of Preferences, Rights and Limitations of Series A-1 Convertible Preferred Stock, par value \$0.001 per share, dated June 5, 2013		8-K (Exhibit 3.1)	6/6/2013	001-33351
4.6	Certificate of Designation of Preferences, Rights and Limitations of Series A-2 Convertible Preferred Stock, par value \$0.001 per share, dated June 5, 2013		8-K (Exhibit 3.2)	6/6/2013	001-33351
4.7	Certificate of Designation of Preferences, Rights and Limitations of Series A-3 Convertible Preferred Stock, par value \$0.001 per share, dated June 24, 2014		8-K (Exhibit 3.1)	6/25/2014	001-33351
4.8	Certificate of Designation of Preferences, Rights and Limitations of Series A-4 Convertible Preferred Stock, par value \$0.001 per share, dated June 24, 2014		8-K (Exhibit 3.2)	6/25/2014	001-33351
4.9	Certificate of Designation of Preferences, Rights and Limitations of Series B Convertible Preferred Stock, par value \$0.001 per share, dated May 26, 2015		8-K (Exhibit 3.1)	5/29/2015	001-33351
4.10	Certificate of Designation of Preferences, Rights and Limitations of Series C Convertible Preferred Stock, par value \$0.001 per share, dated December 30, 2015		8-K (Exhibit 3.1)	12/30/2015	001-33351
4.11	Certificate of Designation of Preferences, Rights and Limitations of Series D Convertible Preferred Stock, par value \$0.001 per share, dated June 3, 2016		8-K (Exhibit 3.1)	6/3/2016	001-33351
4.12	Certificate of Designation of Preferences, Rights and Limitations of Series E Convertible Preferred Stock, par value \$0.001 per share, dated December 28, 2016		8-K (Exhibit 3.1)	12/29/2016	001-33351
4.13	Second Amended and Restated Bylaws of NeuroMetrix, Inc.		S-8 (Exhibit 4.2)	8/9/2004	333-118059
4.14	Amendment No. 1 to Second Amended and Restated Bylaws of NeuroMetrix, Inc.		8-K (Exhibit 3.1)	9/17/2007	001-33351
4.15	Specimen Certificate for Shares of Common Stock		S-1/A (Exhibit 4.1)	7/19/2004	333-115440

Exhibit Number	Exhibit Description	Filed with this Report	Incorporated by Reference herein from Form or Schedule	Filing Date	SEC File / Registration Number
4.16	Shareholder Rights Agreement, dated as of March 7, 2007, between NeuroMetrix, Inc. and American Stock Transfer & Trust Company, as Rights Agent		8-A12(b) (Exhibit 4.1)	3/8/2007	001-33351
4.17	Amendment to Shareholder Rights Agreement, dated September 8, 2009, between NeuroMetrix, Inc. and American Stock Transfer & Trust Company, as Rights Agent		8-K (Exhibit 4.1)	9/14/2009	001-33351
4.18	Amendment No. 2 to Shareholder Rights Agreement, dated June 5, 2013, between NeuroMetrix, Inc. and American Stock Transfer & Trust Company, as Rights Agent		8-K (Exhibit 4.2)	6/6/2013	001-33351
4.19	Amendment No. 3 to Shareholder Rights Agreement, dated June 25, 2014, between NeuroMetrix, Inc. and American Stock Transfer & Trust Company, as Rights Agent		8-K (Exhibit 4.2)	6/25/2014	001-33351
4.20	Amendment No. 4 to Shareholder Rights Agreement, dated May 28, 2015, between NeuroMetrix, Inc. and American Stock Transfer & Trust Company, as Rights Agent		10-Q (Exhibit 4.1)	7/23/2015	001-33351
4.21	Amendment No. 5 to Shareholder Rights Agreement, dated December 29, 2015, between NeuroMetrix, Inc. and American Stock Transfer & Trust Company, as Rights Agent		8-K (Exhibit 4.3)	12/30/2015	001-33351
4.22	Amendment No. 6 to Shareholder Rights Agreement, dated June 3, 2016, between NeuroMetrix, Inc. and American Stock Transfer & Trust Company, as Rights Agent		8-K (Exhibit 4.2)	6/3/2016	001-33351
4.23	Amendment No. 7 to Shareholder Rights Agreement, dated December 28, 2016, between NeuroMetrix, Inc. and American Stock Transfer & Trust Company, as Rights Agent		8-K (Exhibit 4.2)	12/29/2016	001-33351
4.24	Amendment No. 8 to Shareholder Rights Agreement, dated February 8, 2017, between NeuroMetrix, Inc. and American Stock Transfer & Trust Company, as Rights Agent		10-K (Exhibit 4.2.9)	2/8/2017	001-33351
4.25	Amendment No. 9 to Shareholder Rights Agreement, dated July 10, 2017, between NeuroMetrix, Inc. and American Stock Transfer & Trust Company, as Rights Agent		8-K (Exhibit 4.2)	7/11/2017	001-33351
4.26	Amendment No. 10 to Shareholder Rights Agreement, dated February 5, 2018, between NeuroMetrix, Inc. and American Stock Transfer & Trust Company, as Rights Agent		10-K (Exhibit 4.2.11)	2/8/2018	001-33351
4.27	Amendment No. 11 to Shareholder Rights Agreement, dated January 21, 2019, between NeuroMetrix, Inc. and American Stock Transfer & Trust Company, as Rights Agent		10-K (Exhibit 4.2.11)	1/24/2019	001-33351
4.28	Form of Unit Warrant to purchase Common Stock (February 2012)		S-1/A (Exhibit 4.5)	1/31/2012	333-178165
4.29	Form of Placement Agent Warrant (February 2012)		S-1/A (Exhibit 4.6)	1/31/2012	333-178165
4.30	Form of Common Stock Purchase Warrant (June 2013)		8-K/A (Exhibit 4.1)	6/7/2013	001-33351
4.31	Form of Common Stock Purchase Warrant (June 2014)		8-K (Exhibit 4.1)	6/25/2014	001-33351

Exhibit Number	Exhibit Description	Filed with this Report	Incorporated by Reference herein from Form or Schedule	Filing Date	SEC File / Registration Number
4.32	Form of Warrant (2015) issued as part of a Unit on May 29, 2015		S-1/A (Exhibit 4.3)	5/4/2015	333-188133
4.33	Form of Underwriter's Warrant (2015) issued on May 29, 2015		S-1/A (Exhibit 4.5)	4/13/2015	333-188133
4.34	Form of Series A Common Stock Purchase Warrant (December 2015)		8-K (Exhibit 4.1)	12/30/2015	001-33351
4.35	Form of Series B Common Stock Purchase Warrant (December 2015)		8-K (Exhibit 4.2)	12/30/2015	001-33351
4.36	Form of Common Stock Purchase Warrant (June 2016)		8-K (Exhibit 4.1)	6/3/2016	001-33351
4.37	Form of Common Stock Purchase Warrant (December 2016)		8-K (Exhibit 4.1)	12/29/2016	001-33351
4.38	Form of Certificate of Amendment or Designation with respect to Preferred Stock.		**		
4.39	Form of Warrant Agreement and Warrant Certificate.		**		
4.40	Form of Rights Agreement and Right Certificate.		**		
4.41	Form of Unit Agreement and Unit.		**		
5.1	Opinion of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. with respect to the legality of the securities being registered.	X			
12.1	Computation of Ratio of Earnings to Fixed Charges.		**		
23.1	Consent of Moody, Famiglietti and Andronico LLP, an independent registered public accounting firm.	X			
23.2	Consent of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.	X			Included in the opinion filed as Exhibit 5.1.
24.1	Powers of Attorney	X			Included on the signature page of this registration statement.

** To be filed by amendment.



One Financial Center
Boston, MA 02111
617-542-6000
617-542-2241 fax
www.mintz.com

January 24, 2019

NeuroMetrix, Inc.
1000 Winter Street
Waltham, MA 02451

Ladies and Gentlemen:

We have acted as counsel to NeuroMetrix, Inc., a Delaware corporation (the "Company"), in connection with the preparation and filing with the Securities and Exchange Commission (the "Commission") of a Registration Statement on Form S-3 (the "Registration Statement"), pursuant to which the Company is registering under the Securities Act of 1933, as amended (the "Securities Act"), the following:

- (i) common stock, \$0.0001 par value per share (the "Common Stock");
- (ii) preferred stock, \$0.001 par value per share (the "Preferred Stock");
- (iii) warrants to purchase Common Stock and/or Preferred Stock (the "Warrants"), which may be issued under warrant agreements, to be dated on or about the date of the first issuance of the applicable Warrants thereunder, by and between the Company and a warrant agent to be selected by the Company (each, a "Warrant Agreement");
- (iv) rights to purchase Common Stock or Preferred Stock (the "Rights"), which may be issued pursuant to a rights agreement and certificates issued thereunder, to be dated on or about the date of the first issuance of the applicable Rights thereunder, by and between the Company and a rights agent to be selected by the Company (each, a "Rights Agreement");
- (vi) units comprised of one or more shares of Common Stock, shares of Preferred Stock, Rights and Warrants, in any combination (the "Units"), which may be issued under unit agreements, to be dated on or about the date of the first issuance of the applicable Units thereunder, by and between the Company and a unit agent to be selected by the Company (each, a "Unit Agreement").

The Common Stock, the Preferred Stock, the Warrants and the Rights are collectively referred to herein as the "Securities." The Securities are being registered for offering and sale from time to time on a delayed or continuous basis pursuant to Rule 415 under the Securities Act. The maximum aggregate public offering price of the Securities being registered will be \$25,000,000. Each share of Common Stock that the Company issues includes a right to purchase Series A Junior Participating Cumulative Preferred Stock, par value \$.001 per share (an "Existing Right"), issuable pursuant to the Shareholder Rights Agreement, dated as of March 7, 2007, as amended, between the Company and American Stock Transfer & Trust Company (the "Existing Rights Agreement"). Each share of Common Stock has an attached Existing Right to purchase one hundred forty-four ten-thousandths of a share of Series A Junior Participating Cumulative Preferred Stock, which Existing Rights are not currently exercisable, on the terms set forth in the Existing Rights Agreement.

In connection with this opinion, we have examined the Company's Amended and Restated Certificate of Incorporation (the "Certificate of Incorporation"), Second Amended and Restated By-Laws, as amended (the "By-Laws"), and the Existing Rights Agreement, each as currently in effect, such other records of the corporate proceedings of the Company and certificates of the Company's officers as we have deemed relevant, as well as the Registration Statement and the exhibits thereto.

In our capacity as counsel to the Company in connection with such registration, we are familiar with the proceedings taken and proposed to be taken by the Company in connection with the authorization and issuance of the Securities. For purposes of this opinion, we have assumed that such proceedings that have not yet been completed will

be timely and properly completed, in accordance with all requirements of applicable federal and Delaware laws, in the manner presently proposed.

In our examination, we have assumed the genuineness of all signatures, the legal capacity of natural persons, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as certified, photostatic or facsimile copies and the authenticity of the originals of such copies.

With respect to our opinion regarding the nature of the Existing Rights as binding obligations of the Company, we (i) express no opinion as to the determination that a court of competent jurisdiction may make regarding whether the Company's Board of Directors would be required to redeem or terminate, or take other action with respect to the Existing Rights at some future time based on the facts and circumstances existing at that time; (ii) have assumed that the members of the Company's Board of Directors have acted in a manner consistent with their fiduciary duties as required under applicable law in adopting the Existing Rights Agreement; and (iii) have addressed the Existing Rights and the Existing Rights Agreement in their entirety, and it is not settled whether the invalidity of any particular provision of the Existing Rights Agreement or the Existing Rights issued thereunder would result in invalidating the Existing Rights in their entirety.

Members of our firm are admitted to the Bar of the Commonwealth of Massachusetts, and we do not express any opinion as to the laws of any other jurisdiction other than the General Corporation Law of the State of Delaware (including the applicable provisions of the Delaware Constitution and the reported judicial decisions interpreting such laws) and the United States federal laws. To the extent that any applicable document is stated to be governed by the laws of another jurisdiction, we have assumed for purposes of this opinion that the laws of such jurisdiction are identical to the state laws of the Commonwealth of Massachusetts. No opinion is expressed herein with respect to (i) the qualification of the Securities or the Existing Rights under the securities or blue sky laws of any state or any foreign jurisdiction or (ii) the compliance with any federal or state law, rule or regulation relating to securities, or to the sale or issuance thereof. The Securities may be offered and sold from time to time on a delayed or continuous basis, but this opinion is limited to the laws, including the rules and regulations thereunder, as in effect on the date hereof.

Based upon the foregoing and in reliance thereon, and subject to the qualifications herein stated, we are of the opinion that:

1. With respect to the Common Stock, when (i) specifically authorized for issuance by the Company's Board of Directors or an authorized committee thereof (the "Authorizing Resolutions"), (ii) the Registration Statement, as finally amended (including all post-effective amendments), has become effective under the Securities Act, (iii) an appropriate prospectus supplement with respect to the applicable shares of Common Stock has been prepared, delivered and filed in compliance with the Securities Act and the applicable rules and regulations thereunder, (iv) if the applicable shares of Common Stock are to be sold pursuant to a purchase, underwriting or similar agreement (an "Underwriting Agreement"), such Underwriting Agreement with respect to the applicable shares of Common Stock in the form filed as an exhibit to the Registration Statement, any post-effective amendment thereto or to a Current Report on Form 8-K, has been duly authorized, executed and delivered by the Company and the other parties thereto, (v) the terms of issuance and sale of the Common Stock have been duly established in conformity with the Company's then operative Certificate of Incorporation and By-Laws and do not violate any applicable law or result in a default under or breach of any agreement or instrument binding on the Company and comply with any requirement or restriction imposed by any court or governmental body having jurisdiction over the Company, (vi) the Common Stock has been issued and sold as contemplated by the Registration Statement and the prospectus included therein, and (vii) the Company has received the consideration provided for in the Authorizing Resolutions and, if applicable, the Underwriting Agreement, the Common Stock and the Existing Rights will be validly issued, fully paid and nonassessable.

2. With respect to the Preferred Stock, when (i) specifically authorized for issuance by the Authorizing Resolutions, (ii) the Registration Statement, as finally amended (including all post-effective amendments), has become effective under the Securities Act, (iii) an appropriate prospectus supplement with respect to the applicable shares of Preferred Stock has been prepared, delivered and filed in compliance with the Securities Act and the applicable rules and regulations thereunder, (iv) if the applicable shares of Preferred Stock are to be sold pursuant to an Underwriting Agreement, such Underwriting Agreement with respect to the applicable shares of Preferred Stock in the form filed as an exhibit to the Registration Statement, any post-effective amendment thereto or to a Current Report on Form 8-K, has been duly authorized, executed and delivered by the Company and the other parties thereto, (v) an appropriate Certificate or Certificates of Amendment or Designation relating to a class or series of the Preferred Stock to be sold under the Registration Statement has been duly authorized and adopted and filed with the Secretary of State of Delaware, (vi) the terms of issuance and sale of shares of such class or series of Preferred Stock have been duly established in conformity with the Company's then operative Certificate of Incorporation and By-Laws and do not violate any applicable law or result in a default under or breach of any agreement or instrument binding upon the Company and comply with any requirement or restriction imposed by any court or governmental body having

jurisdiction over the Company, (vii) shares of such class or series of Preferred Stock have been duly issued and sold as contemplated by the Registration Statement and the prospectus included therein, and (viii) the Company has received the consideration provided for in the Authorizing Resolutions and, if applicable, the Underwriting Agreement, such Preferred Stock will be validly issued, fully paid and nonassessable.

3. With respect to the Warrants, when (i) specifically authorized for issuance by the Authorizing Resolutions, (ii) the Registration Statement, as finally amended (including all post-effective amendments), has become effective under the Securities Act, (iii) the Warrant Agreement relating to the Warrants has been duly authorized, executed and delivered, (iv) an appropriate prospectus supplement with respect to the applicable Warrants has been prepared, delivered and filed in compliance with the Securities Act and the applicable rules and regulations thereunder, (v) if the applicable Warrants are to be sold pursuant to an Underwriting Agreement, such Underwriting Agreement with respect to the applicable Warrants in the form filed as an exhibit to the Registration Statement, any post-effective amendment thereto or to a Current Report on Form 8-K, has been duly authorized, executed and delivered by the Company and the other parties thereto, (vi) the terms of the Warrants and of their issuance and sale have been duly established in conformity with the Warrant Agreement and do not violate any applicable law or result in a default under or breach of any agreement or instrument binding upon the Company and comply with any requirement or restriction imposed by any court or governmental body having jurisdiction over the Company, (vii) the Warrants have been duly executed and countersigned in accordance with the Warrant Agreement and issued and sold as contemplated by the Registration Statement and the prospectus included therein, and (viii) the Company has received the consideration provided for in the Authorizing Resolutions and, if applicable, the Underwriting Agreement, the Warrants will constitute valid and legally binding obligations of the Company.

4. With respect to the Rights, when (i) specifically authorized for issuance by the Authorizing Resolutions, (ii) the Registration Statement, as finally amended (including all post-effective amendments), has become effective under the Securities Act, (iii) the Rights Agreement and any certificates relating to the Rights have been duly authorized, executed and delivered, (iv) an appropriate prospectus supplement with respect to the applicable Rights has been prepared, delivered and filed in compliance with the Securities Act and the applicable rules and regulations thereunder, (v) if the applicable Rights are to be sold pursuant to an Underwriting Agreement, such Underwriting Agreement with respect to the applicable Rights in the form filed as an exhibit to the Registration Statement, any post-effective amendment thereto or to a Current Report on Form 8-K, has been duly authorized, executed and delivered by the Company and the other parties thereto, (vi) the terms of the Rights and of their issuance and sale have been duly established in conformity with the Rights Agreement and any rights certificates and do not violate any applicable law or result in a default under or breach of any agreement or instrument binding upon the Company and comply with any requirement or restriction imposed by any court or governmental body having jurisdiction over the Company, (vii) the Rights have been duly executed and countersigned in accordance with the Rights Agreement and issued and sold as contemplated by the Registration Statement and the prospectus included therein, and (viii) the Company has received the consideration provided for in the Authorizing Resolutions and, if applicable, the Underwriting Agreement, the Rights will constitute valid and legally binding obligations of the Company.

5. With respect to the Units, when (i) specifically authorized for issuance by the Authorizing Resolutions, (ii) the Registration Statement, as finally amended (including all post-effective amendments), has become effective under the Securities Act, (iii) the Unit Agreement relating to the Units has been duly authorized, executed and delivered, (iv) an appropriate prospectus supplement with respect to the applicable Units has been prepared, delivered and filed in compliance with the Securities Act and the applicable rules and regulations thereunder (v) if the applicable Units are to be sold pursuant to an Underwriting Agreement, such Underwriting Agreement with respect to the applicable Units in the form filed as an exhibit to the Registration Statement, any post-effective amendment thereto or to a Current Report on Form 8-K, has been duly authorized, executed and delivered by the Company and the other parties thereto, (vi) the terms of the Units and of their issuance and sale have been duly established in conformity with the Unit Agreement and do not violate any applicable law or result in a default under or breach of any agreement or instrument binding upon the Company and comply with any requirement or restriction imposed by any court or governmental body having jurisdiction over the Company, (vii) the Units have been duly executed and countersigned in accordance with the Unit Agreement and issued and sold as contemplated by the Registration Statement and the prospectus included therein, and (viii) the Company has received the consideration provided for in the Authorizing Resolutions and, if applicable, the Underwriting Agreement, the Units will constitute valid and legally binding obligations of the Company.

The opinions set forth above are subject to the following exceptions, limitations and qualifications: (i) the effect of bankruptcy, insolvency, reorganization, fraudulent conveyance, moratorium or other similar laws now or hereafter in effect relating to or affecting the rights and remedies of creditors; (ii) the effect of general principles of equity, whether enforcement is considered in a proceeding in equity or at law, and the discretion of the court before which any proceeding therefor may be brought; (iii) the unenforceability under certain circumstances under law or

court decisions of provisions providing for the indemnification of, or contribution to, a party with respect to a liability where such indemnification or contribution is contrary to public policy; and (iv) we express no opinion concerning the enforceability of any waiver of rights or defenses with respect to stay, extension or usury laws.

We have relied as to certain matters on information obtained from public officials, officers of the Company, and other sources believed by us to be responsible and we have assumed that the Warrant Agreement, Rights Agreement and Unit Agreement will be duly authorized, executed, and delivered by the warrant agent, rights agent and unit agent, respectively, thereunder. With respect to our opinion as to the Common Stock and Securities convertible into or exercisable for shares of Common Stock, we have assumed that, at the time of issuance and sale, a sufficient number of shares of Common Stock are authorized and available for issuance under the Company's Certificate of Incorporation as then in effect and that the consideration for the issuance and sale of the Common Stock (or Preferred Stock convertible into Common Stock or Warrants or Rights exercisable for Common Stock or any Units of such Securities) is in an amount that is not less than the par value of the Common Stock. With respect to our opinion as to the Preferred Stock and Securities convertible into or exercisable for shares of Preferred Stock, we have assumed that, at the time of issuance and sale, a sufficient number of shares of Preferred Stock are authorized, designated and available for issuance and that the consideration for the issuance and sale of the Preferred Stock (or Warrants or Rights exercisable for Preferred Stock or any Units of such Securities) is in an amount that is not less than the par value of the Preferred Stock. We have also assumed that any Warrants, Rights and Units offered under the Registration Statement, and the related Warrant Agreement, Rights Agreement and Unit Agreement, as applicable, will be executed in the forms filed as exhibits to the Registration Statement or incorporated by reference therein. We have not independently verified any of the foregoing assumptions.

Please note that we are opining only as to the matters expressly set forth herein, and no opinion should be inferred as to any other matters. This opinion is based upon currently existing statutes, rules, regulations and judicial decisions, and we disclaim any obligation to advise you of any change in any of these sources of law or subsequent legal or factual developments which might affect any matters or opinions set forth herein.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act and to the use of this Firm's name therein and in the prospectus included therein under the caption "Legal Matters." In giving such consent, we do not hereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission.

Very truly yours,

/s/ Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.

Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in this Registration Statement on Form S-3 of our report dated January 24, 2019 relating to the financial statements and schedule, which appears in NeuroMetrix, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2018. Our report contains an explanatory paragraph regarding the Company's ability to continue as a going concern.

We also consent to the reference to us under the heading "Experts" in such Registration Statement.

/s/ Moody, Famiglietti, & Andronico, LLP

Moody, Famiglietti, & Andronico, LLP
Tewksbury, MA
January 24, 2019