NeuroMetrix, Inc.
Form S-3
October 15, 2014

As filed with the Securities and Exchange Commission on October 15, 2014

Registration No. 333-

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	**04-3308180**
(State or other jurisdiction of	**(I.R.S. Employer**

incorporation or organization) Identification Number)

62 Fourth Avenue

Waltham, MA 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.

62 Fourth Avenue

Waltham, MA 02451

(781) 890-9989

(Name, address, including zip code, and telephone number, including area code, of agent for service)

With a copy 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.

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. x

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

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, 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 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, or a smaller reporting company. See the definitions of “large accelerated filer,” “accelerated filer” and “smaller reporting company” in Rule 12b-2 of the Exchange Act.

Large accelerated filer¨ Accelerated filer ¨

Non-accelerated filer ¨ (Do not check if a smaller reporting company) Smaller reporting company x

CALCULATION OF REGISTRATION FEE

Title of each Class of Securities to be Registered	Amount to be Registered (1)	Proposed Maximum Offering Price Per Share	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee
Common Stock, $0.0001 par value per share	3,300,979 (3)	$ 1.66 (4)	$5,479,625.14	$ 636.74
Rights to purchase Series A Junior Participating Cumulative Preferred Stock, $0.001 par value(2)	(2)	(2)	(2)	(2)

(1) Pursuant to Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), this Registration Statement shall also cover any additional shares of common stock which become issuable by reason of any stock dividend, stock split or other similar transaction that results in an increase in the number of the outstanding shares of common stock of the Registrant.

(2) Pursuant to a shareholder rights agreement, dated as of March 7, 2007, between the Company 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.

(3) The number of shares of common stock includes 3,300,979 shares of common stock issuable upon exercise of the Company's five year warrants (the "Warrants").

(4) In accordance with Rule 457(c) under the Securities Act, the aggregate offering price of the common stock is estimated solely for the calculation of the registration fees due for this filing. This estimate was based on the average of the high and low sales price of our stock reported by The NASDAQ Capital Market on October 10, 2014.

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.

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 WE ARE NOT SOLICITING OFFERS TO BUY THESE SECURITIES IN ANY STATE WHERE THE OFFER OR SALE IS NOT PERMITTED.

Subject to Completion, Dated October 15, 2014

PROSPECTUS

NEUROMETRIX, INC.

3,300,979 Shares of Common Stock

This prospectus relates to the resale of up to 3,300,979 shares of our common stock issuable upon exercise of outstanding Warrants.

These shares will be resold from time to time by the entities listed in the section titled “Selling Security holders” beginning on page 18, which we refer to as the selling security holders. The shares of common stock offered under this prospectus by the selling security holders are issuable upon exercise of securities issued pursuant to the Securities Purchase Agreement by and among NeuroMetrix, Inc. and the selling security holders, dated as of June 24, 2014 (the “Purchase Agreement”). We are not selling any securities under this prospectus and will not receive any of the proceeds from the sale of securities by the selling security holders.

The selling security holders may sell the shares of common stock described in this prospectus in a number of different ways and at varying prices. We provide more information about how a selling security holder may sell its shares of common stock in the section titled “Plan of Distribution” on page 20. We will pay the expenses incurred in registering the securities covered by the prospectus, including legal and accounting fees.

Our common stock is quoted on The NASDAQ Capital Market, or NASDAQ, under the symbol “NURO.” On October 10, 2014, the last reported sale price of our common stock was $1.68 per share.

Investing in our securities involves risks. See "Risk Factors" beginning on page 6 of this prospectus.

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

THE DATE OF THIS PROSPECTUS IS , 2014.

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INFORMATION CONTAINED IN THIS PROSPECTUS

You should rely only on the information contained or incorporated by reference into this prospectus. We have not, and the selling security holders have not, authorized anyone to provide you with additional or different information. These securities are not being offered in any jurisdiction where the offer is not permitted. You should assume that the information in this prospectus is accurate only as of the date on the front of the document and that any information we have incorporated by reference is accurate only as of the date of the documents incorporated by reference, regardless of the time of delivery of this prospectus or of any sale of our common stock. Unless the context otherwise requires, references to “we,” “our,” “us,” or the “Company” in this prospectus mean NeuroMetrix, Inc.

PROSPECTUS SUMMARY

The following is only a summary. We urge you to read the entire prospectus, including the more detailed financial statements, notes to the financial statements and other information included herein or incorporated by reference from our other filings with the U.S. Securities and Exchange Commission (SEC). Investing in our securities involves risks. Therefore, please carefully consider the information provided under the heading "Risk Factors" beginning on page 6.

Our Business and Opportunity

NeuroMetrix is an innovative health-care company that develops wearable medical technology and point-of-care tests that help patients and physicians manage chronic pain, nerve disease, and sleep disorders. We were founded in 1996 and have been publicly traded on NASDAQ since 2004. Our technology foundation, which was built at Harvard Medical School and the Massachusetts Institute of Technology, has been and continues to be employed in numerous FDA-cleared products that have been used by physicians in over 6 million diagnostic tests of nerve function. We have an intellectual property base that encompasses 62 issued and pending patents and extensive, difficult to replicate know-how in our practice area. We have an experienced management team and Board of Directors, and we are strategically located in the greater Boston area.

One of our primary markets is the management and treatment of the neurological complications of diabetes. People with diabetes do not effectively regulate their blood glucose, or sugar, levels leading to chronically high levels of glucose in the blood, called hyperglycemia, and occasionally bouts of low glucose in the blood, called hypoglycemia. The primary reason that glucose levels are not effectively regulated in people with diabetes is that those with the disease do not produce insulin (Type I diabetes) or are resistant to the normal physiological action of insulin (Type II diabetes). Many Type II diabetics eventually require insulin because production of the hormone by their pancreas decreases with time. Type I diabetes usually affects children and teenagers whereas Type II diabetes has typically been a disease of adults over the age of 50. However, over the past decade, Type II diabetes is occurring in younger adults, which may be attributable to higher levels of obesity in this age group.

Diabetes is a worldwide epidemic. Recent studies estimate the worldwide prevalence of diabetes to be over 350 million people, of which approximately 90% have the Type II variety. Within the United States, there are over 25 million people with diabetes and another 80 million people with pre-diabetes, which represents a constellation of conditions such as obesity and high triglyceride levels that are likely to progress to diabetes. In the United States, the annual cost of treating diabetes is over $100 billion. Although there are dangerous acute manifestations of diabetes, the primary burden of the disease is in the long-term complications of chronic hyperglycemia. These complications include, among other things, cardiovascular disease, nerve disease and resulting pathological conditions such as foot ulcers and amputation, eye disease leading to blindness, and kidney failure.

The most common long-term complication of diabetes, which affects over 50% of the diabetic population, is nerve disease or diabetic peripheral neuropathy (DPN). DPN is a systemic nerve disease that is worse in the feet and lower legs. It may lead to loss of sensation in the feet, severe pain in the feet and legs, and increased risk of falling. DPN is the primary trigger for diabetic foot ulcers, which may progress to the point where amputation is required. People with diabetes have a 15% to 25% lifetime risk of developing a foot ulcer and approximately 15% of foot ulcers lead to amputation. Foot ulcers are among the most expensive complications of diabetes, with a typical cost of $5,000 to $50,000 per episode. In addition, between 16% and 26% of people with diabetes suffer from pain of the feet and lower legs due to painful diabetic neuropathy, or PDN, which is a condition caused by DPN. In addition to causing pain that is often severe, PDN may interfere with sleep and is also associated with anxiety and depression. Loss of sleep is particularly concerning because sleep deprivation is associated with insulin resistance and worse glycemic control, and thereby exacerbates diabetes severity.

Most people with diabetes receive health care attention in primary care settings where physicians have limited access to sophisticated diagnostic tools to detect diabetic neuropathy early and monitor its progress and response to treatment. As a result, these physicians rely primarily on clinical examination of patients which, although it is an important part of the evaluation of a patient with diabetes, has limited sensitivity and specificity and can usually only detect later stage disease where treatment options and efficacy are compromised.

Early detection of DPN is particularly important because there are no treatment options once the nerves have degenerated. At the present time, the most widely used and recommended diagnostic method for DPN is the 5.07/10-g monofilament test. This test assesses the patient’s ability to detect focal pressure application in the foot. The inability to detect a monofilament indicates that the patient lacks adequate sensation to protect their feet from mechanical insults that can lead to foot ulcers; a condition known as loss of protection sensation, or LOPS. Although the monofilament is an important clinical test, it is insensitive to early DPN where interventions may slow or even halt further nerve damage. Nerve conduction studies, or NCS, are objective electrical tests of nerve function. They are considered the gold standard diagnostic method for DPN and can detect mild nerve damage before it is expressed as clinical symptoms. NCS have typically been provided by specialists using expensive equipment and therefore access has been limited, particularly for common conditions such as DPN.

Currently, there are limited treatment options for diabetic neuropathies. There are no approved disease-modifying treatments for DPN in the United States, although a few pharmacological candidates are in clinical trials. One such drug is Ranirestat, an aldose reductase inhibitor being developed in the United States by Eisai Co., Ltd., which has recently completed a large scale Phase III clinical trial. If Ranirestat becomes commercially available, it may expand the demand for early detection and monitoring of DPN. In the absence of targeted therapies, several large studies have shown that reducing hyperglycemia lowers the risk of developing DPN and decreases its severity. There is also observational data that suggests that a reduction in triglyceride levels slows the progression of DPN. Outside the United States, an aldose reductase inhibitor, Kinedak, has been approved by regulatory authorities in Japan and is marketed by Ono Pharmaceutical Company, Ltd for treatment of DPN, including symptoms such as numbness, pain and cramps in the hands and feet.

Several drugs, such as duloxetine and pregabalin, have been approved to provide pain relief in patients with PDN. Unfortunately, these drugs, which are also anti-depressants or anti-seizure medications, have systemic effects and are therefore often associated with side effects. In the case of PDN and/or DPN, it is essential to intervene before extensive nerve degeneration has occurred.

Our Strategy

We believe that there are large and important unmet needs in the treatment of diabetic neuropathies and adjacent forms of chronic pain such as fibromyalgia, post herpetic neuropathy (shingles), and conditions involving both chronic pain and disturbed sleep such as restless leg syndrome. As a medical device company with both unique and substantial experience in devices to measure and alter peripheral nerve function, we believe we are in the unique position to address these unmet needs through the development of novel proprietary medical devices. Accordingly, we have a major focus on developing and marketing medical devices for diabetic neuropathies. We believe that we are the only medical device company with a strategic focus on the diabetic neuropathy market and our goal is to be the dominant player in this field.

Our key business strategies for 2014 by which we intend to advance our objectives in the diabetic neuropathy market include:

Driving Commercial Adoption of Our Proprietary Products for Diabetic Neuropathy in the United States. Our two primary products that target the diabetic neuropathy market are the following:

- **SENSUS**, our therapeutic device for treating chronic pain, was launched in early January 2013. During the first half of 2014 we shipped approximately 3,200 SENSUS devices and recorded SENSUS revenues of approximately $451,000 during the first half of 2014 and $65,000 during 2013. SENSUS is a convenient and wearable non-invasive device that offers a non-narcotic pain relief option as a complement to medications. The device is lightweight and can be worn during the day while remaining active, or at night while sleeping. We believe SENSUS is the only wearable transcutaneous electrical nerve stimulator designed specifically for people with diabetes that suffer from chronic pain. We market SENSUS to physicians managing patients with PDN, as well as other chronic pain syndromes. We believe that PDN impacts 3 to 5 million people in the United States alone. We estimate the wholesale market for SENSUS is characterized by the 50% of patients with either severe pain or sleep interference due to PDN. This represents an annual revenue potential in excess of $300 million. We also believe that there are international market opportunities, particularly in Europe and Japan. We are building distribution in several distinct channels: independent durable medical equipment, or DME, suppliers that employ sales representatives who detail physicians, large direct sale customers such as orthotic and prosthetic clinics and chronic pain treatment centers, and national diabetes mail order DMEs. We believe there are future opportunities to expand our SENSUS revenue and gross margin potential with an over-the-counter version of SENSUS.

- **NC-stat DPNCheck**, our point-of-care neuropathy test for peripheral neuropathies such as DPN was launched in late 2011 and achieved revenues of approximately $638,000 during the first half of 2014 and $444,000 in 2013. DPNCheck revenue during 2013 was approximately $1.3 million. Our marketing focus in the United States is Medicare Advantage providers who assume financial responsibility and the associated risks for the health care costs of their patients. In this market, we believe that NC-stat DPNCheck presents an attractive clinical case where early detection of diabetic neuropathy allows earlier clinical intervention to help mitigate the effects of diabetic neuropathy on both patient quality of life and cost of care. Also, the diagnosis and documentation of diabetic neuropathy provided by NC-stat DPNCheck helps clarify the patient health profile which, in turn, may have a direct, positive effect on the Medicare Advantage premium received by the provider. Outside of the United States, we are working with Omron Healthcare Company, Ltd. on regulatory and distribution matters in Japan, and we launched NC-stat DPNCheck in that market during the third quarter of 2014. Other attractive international market opportunities include China where we are also working with Omron Healthcare and the Middle East and Mexico which we are addressing with local distributors.

Continuing the Productivity of Our Research and Development Pipeline. In three years we have established a new presence in diabetic neuropathy with the launch of NC-stat DPNCheck in late 2011 followed by SENSUS in early 2013. The potential market penetration by SENSUS was enhanced later in 2013 with the addition of unique functionality related to its use during nighttime sleep. Half of the patients with PDN report pain interfering with sleep. Sleep impairment is associated with insulin resistance, worsening of glycemic control, and exacerbation of the severity of diabetes. In the first quarter of 2014, we launched a second-generation version of SENSUS with a lower profile and features to enhance patient use. Early in the third quarter of 2014 we reported that we had received regulatory clearance from the FDA for an over-the-counter device for chronic pain based on the SENSUS technology. We believe there is a substantial market opportunity for over-the-counter wearable technology for the treatment of chronic pain and we have a development program well underway.

Commercializing NC-stat DPNCheck in Select International Markets Using a Distribution Network. We are targeting select international markets where we believe that the combination of a high prevalence of diabetes plus support from the local payer system will support sales of NC-stat DPNCheck and, eventually, SENSUS. This includes countries in Asia, the Middle East, Mexico, and potentially Western Europe where we have both CE marking for NC-stat DPNCheck and established distribution. We have partnered with Omron Healthcare Company, Ltd. in Asia and have entered agreements with Omron for both Japan and China to collaborate on the regulatory process followed by exclusive distribution of NC-stat DPNCheck. The Japan partnership is well advanced, as we received regulatory approval in Japan during the second quarter of 2014, and commenced shipment of NC-stat DPNCheck in that market during the third quarter of 2014. Our China initiative is underway and we filed for regulatory approval in the country during the second quarter of 2014. We have entered into agreements with master distributors for the Middle East and Mexico. Our resources committed to this effort are modest; however, we believe that sales in international markets could contribute meaningful revenue in 2014 and subsequent years.

Leveraging an Efficient Operating Structure with Future Revenue Growth. Our operating structure is designed to support high-value opportunities for SENSUS and NC-stat DPNCheck that can be pursued via independent distribution. This structure is characterized by low headcount, low fixed operating expenses, the flexibility to add variable spending from time to time when opportunities present themselves, and the ability to handle increased sales volume without the cost of adding sales representatives and field clinical support. Our operating expenses during 2013 totaled $10.4 million, and in 2014 should be at this approximate level for core operating spending. During 2014 and 2015 we will likely add targeted, variable R&D and marketing spending to advance our over-the-counter technology program for chronic pain. We believe we can maintain and leverage our operating structure over the next several years as we grow our diabetes business.

Managing Our Legacy Neurodiagnostics Business to Optimize Cash Flow. Our historical neurodiagnostics business is managed for its cash contribution and not growth. There are few practical alternatives in the current healthcare funding environment. The neurodiagnostics business generated revenues of $3.8 million and $6.1 million in 2013 and 2012, respectively, with gross margins in excess of 50% and limited direct operating costs. We expect revenue from the legacy business will continue to decline in the future. See "–Legacy Neurodiagnostics Business."

Our Business Model

Our diagnostic and therapeutic systems consist of a medical device plus biosensors or electrodes that are integral to their use. Other accessories are also offered to our customers. Our goal for these systems is to build an installed base of active customer accounts and distributors that regularly reorder consumables to meet their needs. We successfully implemented this model when we started our business with the NC-stat system, applied it to subsequent product generations and, more recently, to the ADVANCE NCS/EMG System. Our newer products, including SENSUS and NC-stat DPNCheck, and others in our product pipeline, are based on the device plus consumables business model.

Marketed Products

SENSUS Pain Management System

The SENSUS pain therapy device is a transcutaneous electrical nerve stimulator, or TENS, designed for relief of chronic, intractable pain, such as PDN. SENSUS is a convenient and wearable non-invasive device that offers physicians and their patients a non-narcotic pain relief option as a complement to medications. It provides on-demand pain relief at the push of a single button and can also be operated in continuous mode where it delivers an hour of pain therapy during alternating hours. The device is lightweight and can be worn during the day while remaining active, or at night while sleeping. We believe it is the only transcutaneous electrical nerve stimulator designed specifically for people with diabetes that suffer from chronic pain. We market SENSUS to physicians managing patients with PDN

and other forms of chronic pain such as fibromyalgia, post herpetic neuropathy (shingles), and conditions involving both chronic pain and disturbed sleep such as restless leg syndrome. We have used our unique expertise in peripheral nerve stimulation in the development of SENSUS which incorporates several proprietary features for ease of patient use and physician reporting. SENSUS is comprised of: (1) an electronic device with a strap that is worn on the upper calf and (2) an electrode which attaches to the device. We provide prescribing physicians with PC-based software that links to the device via a USB connection, thereby allowing them to download a record of the patient's use of the device.

NC-stat DPNCheck

NC-stat DPNCheck is a fast, accurate, and quantitative nerve conduction test that is used to evaluate systemic neuropathies such as DPN. It is designed to be used by primary care physicians, endocrinologists, podiatrists and other clinicians at the point-of-care to objectively detect, stage, and monitor DPN. The device measures nerve conduction velocity and response amplitude of the sural nerve, a nerve in the lower leg and ankle. These parameters are widely recognized as sensitive and specific biomarkers of DPN. NC-stat DPNCheck is comprised of: (1) an electronic hand-held device and (2) a single patient use biosensor. In addition, we provide users with PC-based software that links to the device via a USB connection. This PC software allows physicians to generate reports and manage their sural nerve conduction data.

ADVANCE System

The ADVANCE NCS/EMG System, or the ADVANCE System, is a comprehensive platform for the performance of traditional nerve conduction studies and invasive electromyography procedures. The ADVANCE System is comprised of: (1) various types of electrodes and needles, (2) the ADVANCE device and related modules, and (3) a communication hub that enables the physician's office to network their device to their personal computers and our servers for data archiving, report generation, and other network services. The ADVANCE System is most commonly used with proprietary nerve specific electrode arrays. These electrode arrays combine multiple individual electrodes and embedded microelectronic components into a single patient-use disposable unit. We currently market seven different nerve specific electrode arrays. Historically, the ADVANCE System has been marketed to a broad range of physician specialties including neurologists, orthopedic surgeons, primary care physicians, and endocrinologists, and utilized for a variety of different clinical indications including assessment of carpal tunnel syndrome, or CTS, low back and leg pain, and DPN. It is most commonly used in the assessment of CTS. Numerous papers have been published on the use of this technology in this clinical application.

The following chart summarizes our previously marketed products and currently marketed products.

Product	Time on Market	Technology	Primary Clinical Indications	No. Patients Tested/Treated
NC-stat*	Q2 1999 – Q3 2010	Nerve Conduction	Diagnosis and evaluation of CTS, low back pain, peripheral neuropathies (including DPN)	~ 1,800,000
ADVANCE	Q2 2008 – present	Nerve Conduction Invasive Needle EMG	Diagnosis and evaluation of CTS, low back pain, peripheral neuropathies (including DPN)	
NC-stat DPNCheck	Q3 2011 – present	Nerve Conduction	Diagnosis and evaluation of peripheral neuropathies, such as DPN	~250,000
SENSUS	Q1 2013– present	Transcutaneous Electrical Nerve Stimulation	Relief for chronic, intractable pain, such as PDN	>4,000

* Support was discontinued in the first quarter of 2012

Legacy Neurodiagnostics Business

We were founded in 1996 as a science-based health care company. Our focus had been the development of innovative products for the detection, diagnosis, and monitoring of peripheral nerve and spinal cord disorders, such as those associated with carpal tunnel syndrome, lumbosacral disc disease and spinal stenosis, and diabetes. Our NC-stat System for the performance of nerve conduction studies at the point-of-care was commercially launched in 1999. The second generation NC-stat was released in 2002. In 2008, we brought to market the more sophisticated ADVANCE System for nerve conduction testing and performance of invasive needle electromyography. These systems were general purpose with broad application in evaluating and diagnosing nerve disorders. Numerous studies demonstrating the clinical accuracy and utility of these devices have been conducted and published in high quality peer-reviewed journals. Furthermore, these devices have been used in FDA sanctioned clinical trials for pharmacological agents and large scale epidemiological studies sponsored by the NIH, Center for Disease Control, or CDC, and other governmental agencies. The products have been cleared by the FDA, field tested for over a decade and highly regarded for their ease of use, accuracy and reproducibility of results.

Following launch of NC-stat in 1999, we experienced rapid revenue growth, which led to our initial public offering in 2004. The health market, particularly the physician office segment, embraced the opportunity to perform nerve conduction tests which previously had always required referral to specialists. Point-of-care nerve testing was seen to provide a combination of improved patient care and patient convenience. The success of point-of-care nerve testing, a market which we created, was met with resistance in some sectors of the medical community, particularly by neurologists and physical medicine and rehabilitation physicians, both of which had traditionally provided nerve testing services. As a consequence of successful lobbying by these specialists, physicians using our technology experienced increased denials of coverage by third party payers resulting in their discontinuing usage and our difficulty in accruing new customer accounts. In late 2009, CMS included in the Physician Fee Schedule a new Category I CPT Code, CPT 95905, for nerve conduction studies performed using preconfigured electrodes such as those employed with our products. During 2010 most Medicare fiscal intermediaries assumed coverage for CPT 95905 for at least some clinical indications; however, the health care environment has been such that we have been unable to secure broad coverage among private payers, which is essential to the success of our ADVANCE system product. This experience was reflected in our revenues which peaked in 2006 at $55.3 million. We reported revenue for our legacy Neurodiagnostics business of $3.8 million in 2013, $6.1 million in 2012, and $10.3 million in 2011.

As we managed our general purpose neurodiagnostic business to improve reimbursement and minimize customer erosion, we increasingly became aware of the unmet medical need for improved diagnostic tools and therapies in the specific area of diabetic neuropathy, or nerve damage caused by diabetes. Diabetes care is one of the faster growing sectors of health care as discussed above. We believe that our tools and therapies for addressing diabetic neuropathy represent a significant market opportunity. Consequently, in 2011 we shifted to diabetes care as our major business focus. We also restructured our neurodiagnostics business to consolidate functions and to eliminate our direct sales force while maintaining support for our neurodiagnostic products and installed base of physician accounts. Our objective for our legacy neurodiagnostics business is to maintain a high standard of product support while managing the business to optimize cash flow.

Risks Affecting Us

Our business is subject to numerous risks, as discussed more fully in the section entitled "Risk Factors" immediately following this prospectus summary. At June 30, 2014 we had an accumulated deficit of $150.0 million and held cash and cash equivalents of $13.7 million. During June 2014 we completed an equity offering which raised gross proceeds totaling $8.0 million. We believe that these resources and the cash to be generated from expected product sales will be sufficient to meet our projected operating requirements for at least the next twelve months. We continue to face significant challenges and uncertainties and, as a result, our available capital resources may be consumed more rapidly than currently expected. Accordingly, we will need to raise additional funds to support our operating and capital needs beyond the next twelve months. However, we may not be able to secure such financing in a timely manner or on favorable terms, if at all. Without additional funds, we may be forced to delay, scale back or eliminate some of our sales and marketing efforts, research and development activities, or other operations and potentially delay product development in an effort to provide sufficient funds to continue our operations.

Our Corporate Information

Our President and Chief Executive Officer, Shai N. Gozani, M.D., Ph.D. founded NeuroMetrix in June 1996. We are incorporated in Delaware. Our common stock is listed on the NASDAQ Capital Market under the ticker symbol "NURO." Our principal offices are located at 62 Fourth Avenue, 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.

Offering of Preferred Shares and Warrants

On June 26, 2014, we completed an offering of securities resulting in approximately $8.0 million in gross proceeds, before deducting offering expenses, in connection with the issuance of (i) 664,600 shares of common stock at a price of $2.04 per share, (ii) 2,621.859 shares of Series A-3 convertible preferred stock (the "Series A-3 Preferred Stock") at a price of $1,000 per share, (iii) 4,022.357 shares of Series A-4 Convertible Preferred Stock (the "Series A-4 Preferred Stock," and together with the Series A-3 Preferred Stock, the "Preferred Stock") at a price of $1,000 per share, and (iv) five year warrants (the "Warrants") to purchase up to 3,921,569 shares of common stock at an exercise price of $2.04 per share. As of July 8, 2014, all of the Series A-3 Preferred Stock had been converted into shares of common stock.

Each share of Preferred Stock has a stated value of $1,000 and is convertible, at any time at the option of the holder thereof, into a number of shares of common stock determined by dividing the stated value by the initial conversion price of $2.04, subject to the 9.99% ownership limitation described below. The Preferred Stock has no dividend rights, liquidation preference or other preferences over common stock and has no voting rights except as provided in the Certificates of Designation of Preferences, Rights and Limitations for the Convertible Preferred Stock, as filed with the Secretary of State of the State of Delaware, or as otherwise required by law.

The Warrants to purchase 3,921,569 shares of common stock are exercisable immediately after issuance, have a five-year term, and a per share exercise price of $2.04. Shares of common stock underlying 3,300,979 of these Warrants are being registered for resale by the selling security holders pursuant to the Registration Statement of which this prospectus forms a part.

The Preferred Stock and the Warrants contain limitations that prevent the holder of any Preferred Stock or Warrants from acquiring shares upon conversion of the Preferred Stock, or exercise of a Warrant, that would result in the number of shares beneficially owned by it and its affiliates exceeding 9.99% of the total number of shares of our common stock then issued and outstanding. In addition, upon certain changes in control of NeuroMetrix, the holder of shares of Preferred Stock or Warrants can elect to receive, subject to certain limitations and assumptions, securities in a successor entity equal to the value of the Preferred Stock or Warrants or if holders of common stock are given a choice of cash or property, then cash or property equal to the value of the outstanding Preferred Stock or Warrants.

The shares of common stock and Series A-3 Preferred Stock described above were offered pursuant to a shelf registration statement (File No. 333-186855), which was declared effective by the SEC on March 15, 2013.

The shares of Series A-4 Preferred Stock and Warrants described above were issued pursuant to the exemption from the registration requirements of the Securities Act provided by Section 4(2) of the Act. The shares of common stock issuable upon conversion of the Series A-4 Preferred Stock and 620,590 shares of common stock issuable upon exercise of the Warrants have been registered pursuant to a resale registration statement (File No. 333-197405), which was declared effective by the SEC on August 6, 2014. This Registration Statement registers the resale of the remaining 3,300,979 shares of common stock issuable upon exercise of the Warrants.

RISK FACTORS

Investing in our securities involves a high degree of risk. You should carefully review and consider the following risk factors and in the section entitled "Risk Factors" contained in our most recent annual report on Form 10-K, which has been filed with the SEC and is incorporated by reference in this prospectus, as well as any updates thereto contained in subsequent filings with the SEC or in any free writing prospectus and all other information contained in this prospectus and incorporated by reference into the prospectus before purchasing our securities. The risks and uncertainties described below are not the only ones facing us. Additional risks and uncertainties that we are unaware of, or that we currently deem immaterial, also may become important factors that affect us. If any of the following risks occur, our business, financial condition or results of operations could be materially and adversely affected. In that case, the trading price of our common stock could decline, and you may lose some or all of your investment.

Risks Related to Our Business

We have incurred significant operating losses since inception and cannot assure you that we will again achieve profitability.

We have incurred significant cumulative net losses since our inception. Our net losses for the six month period ended June 30, 2014 and for the years ended December 31, 2013, 2012, and 2011 were approximately $3.4 million, $8.0 million, $10.0 million, and $10.0 million, respectively. At June 30, 2014, we had an accumulated deficit of approximately $150 million. The extent of our future operating income or losses is highly uncertain, and we cannot assure you that we will be able to achieve or maintain profitability.

We will be required to raise additional funds to finance our operations and remain a going concern beyond the next twelve months; we may not be able to do so when necessary, and/or the terms of any financings may not be advantageous to us.

We held cash and cash equivalents of $13.7 million as of June 30, 2014. During June 2014 we completed an equity offering which raised gross proceeds totaling $8.0 million. We believe that these resources and the cash to be generated from expected product sales will be sufficient to meet our projected operating requirements for at least the next twelve months. We continue to face significant challenges and uncertainties and, as a result, our available capital resources may be consumed more rapidly than currently expected due to (a) decreases in sales of our products and the uncertainty of future revenues from new products; (b) changes we may make to the business that affect ongoing operating expenses; (c) changes we may make in our business strategy; (d) regulatory developments affecting our existing products and delays in the FDA approval process for products under development; (e) changes in our research and development spending plans; and (f) other items affecting our forecasted level of expenditures and use of cash

resources. Accordingly, we will need to raise additional funds to support our operating and capital needs beyond the next twelve months. We may attempt to obtain additional funding through public or private financing, collaborative arrangements with strategic partners, or through additional credit lines or other debt financing sources to increase the funds available to fund operations. However, we may not be able to secure such financing in a timely manner or on favorable terms, if at all. Furthermore, if we issue equity or debt securities to raise additional funds, our existing stockholders may experience dilution, and the new equity or debt securities may have rights, preferences and privileges senior to those of our existing stockholders. If we raise additional funds through collaboration, licensing or other similar arrangements, it may be necessary to relinquish valuable rights to our potential products or proprietary technologies, or grant licenses on terms that are not favorable to us. Without additional funds, we may be forced to delay, scale back or eliminate some of our sales and marketing efforts, research and development activities, or other operations and potentially delay product development in an effort to provide sufficient funds to continue our operations. If any of these events occurs, our ability to achieve our development and commercialization goals would be adversely affected.

Our major focus is on the treatment of the neurological complications of diabetes. We cannot assure you that we will be successful in this field or that our current commercial products for diabetes care, NC-stat DPNCheck and SENSUS, or the product candidates in our development pipeline, will be successful.

We are focused on the treatment of the neurological complications of diabetes. Our initial diabetes care product, NC-stat DPNCheck, which was launched in late 2011, is a fast, accurate, and quantitative nerve conduction test for systemic neuropathies, such as DPN. In January 2013, we launched SENSUS, our pain management therapeutic device for relief of chronic, intractable pain including pain associated with diabetic neuropathy. We also have other product candidates addressing diabetes care in our development pipeline. Our future prospects are closely tied to our success with our NC-stat DPNCheck and SENSUS devices which, in turn, depends upon market acceptance and growth in future revenues. We cannot assure you that our diabetes care strategy, including the sales and marketing of our current products and the commercialization of other product candidates in our development pipeline, will be successful. If our diabetes care strategy is not successful, it could materially affect our revenues and results of operations.

Our future success could be adversely affected by a number of factors, including:

·inability to secure broad, national distribution for SENSUS among DME suppliers;

·inability to increase adoption of NC-stat DPNCheck within the Medicare Advantage market;

·decreased rates of patient visits to physicians;

- unfavorable changes to current Medicare and commercial payer payment policies;

- implementation of the Patient Protection and Affordable Care Act and consequent changes to payor policies;

- unfavorable experiences by patients and physicians using SENSUS and our other commercially available products; and

- physicians' reluctance to alter their existing practices and adopt the use of our devices.

If we are unable to expand exposure and penetrate the market for NC-stat DPNCheck and SENSUS, our ability to increase our revenues will be limited and our business prospects will be adversely affected.

We currently rely on sales of the products that comprise the ADVANCE System to generate a substantial portion of our revenues. Any factors that negatively impact our sales of these products could significantly reduce our ability to generate revenues.

We launched the ADVANCE System, our sophisticated nerve conduction testing system, in June 2008. For the six months ended June 30, 2014 and years ended December 31, 2013 and 2012, 59%, 72% and 81%, respectively, of our total revenue was attributed to the ADVANCE System. For the quarter ended June 30, 2014, $728,000 of our $1.3 million in total revenue was attributed to the ADVANCE System. We continue to derive a substantial portion of our revenues from sales of the products that comprise this system, particularly from electrodes. We expect that sales of ADVANCE System products will constitute about half of our sales during 2014. Accordingly, our ability to generate revenues in the short-term is dependent on our ability to market and sell the products that comprise the ADVANCE System, particularly electrodes. Our sales of these products may be negatively impacted by many factors, including:

- changes in reimbursement rates or policies relating to our products by third-party payers;

- manufacturing problems;

- claims that our products infringe on patent rights or other intellectual property rights owned by other parties;

- adverse regulatory or legal actions relating to our products; and

·clinical trial results relating to our products or our competitors' products.

If any of these events occurs, our ability to generate revenues from the ADVANCE System could be significantly reduced.

If health care providers are unable to obtain sufficient reimbursement or adjustment to capitated premium payments from third-party health care payers related to the use of our products, the adoption of our products and our future product sales will be materially adversely affected.

Widespread adoption of our products by the medical community is unlikely to occur without a financial incentive from third-party payers for the use of these products. If health care providers are unable to obtain adequate reimbursement for procedures performed using our products, if managed care organizations do not receive improved capitated payments due to more accurate patient risk assessment using our products, and if DME suppliers are not adequately reimbursed for supplying our therapeutic products, we may be unable to sell our products at levels that are sufficient to allow us to achieve and maintain profitability, and our business would suffer significantly. Additionally, even if these products and procedures are adequately reimbursed by third-party payers today, adverse changes in payers future policies toward payment would harm our ability to market and sell our products. Third-party payers include those governmental programs such as Medicare and Medicaid, private health insurers, workers' compensation programs and other organizations.

Future regulatory action by CMS or other governmental agencies or negative clinical results may diminish reimbursement payments to physicians for performing procedures using our products. Medicaid reimbursement differs from state to state, and some state Medicaid programs may not cover the procedures performed with our products or pay physicians an adequate amount for performing those procedures, if at all. Additionally, some private payers do not follow the Medicare guidelines and may reimburse for only a portion of these procedures or not at all. We are unable to predict what changes will be made in the reimbursement methods used by private or governmental third-party payers. Importantly, we cannot predict the effects that implementation of the Patient Protection and Affordable Care Act will have on CMS, commercial insurers, health care providers, and ultimately on our business.

Healthcare reform legislation could adversely affect our future revenues.

Our future revenues will be impacted by the CMS Durable Medical Equipment, Prosthetics, Orthotics and Supplies (DMEPOS) Competitive Bidding Program. Under this program, Medicare will no longer reimburse suppliers for certain products and services, including transcutaneous electrical nerve stimulation (TENS), based on the Medicare fee schedule amount. Instead CMS will provide reimbursement for those products and services based on a competitive bidding process. Our SENSUS pain management system is presently classified within TENS. The DMEPOS Competitive Bidding Program will likely require us to sell SENSUS devices and related consumables subject to Medicare reimbursement at significantly lower prices which would have a material adverse effect on SENSUS profitability. In those regions of the country where DMEPOS Competitive Bidding was implemented in January 2014, low Medicare pricing is restricting our ability to sell SENSUS. As the DMEPOS program is expanded to other

regions, a similar effect will likely be seen. The unique product features of SENSUS may provide an opportunity, which we intend to pursue, to segregate SENSUS from the generic TENS category. If successful, this could lessen the negative impact of DMEPOS competitive bidding on SENSUS Medicare reimbursement.

We are subject to extensive regulation by the FDA which could restrict the sales and marketing of the NC-stat DPNCheck and SENSUS devices and the ADVANCE System as well as other products for which we may seek FDA clearance or approval, and could cause us to incur significant costs.

We sell medical devices that are subject to extensive regulation in the United States by the FDA with regard to manufacturing, labeling, sale, promotion, distribution, shipping and ongoing monitoring and follow-up. Before a new medical device, or a new use of or claim for an existing product, can be marketed in the United States, it must first be cleared or approved by the FDA. Medical devices may be marketed only for the indications for which they are approved or cleared. The regulatory review process can be expensive and lengthy. The FDA's process for granting 510(k) clearance typically takes approximately three to six months, but it can be significantly longer. The process for obtaining a pre-market approval, or PMA, is much more costly and onerous. By law, the time period designated for the FDA's review of a PMA is 180 days; however, this time is often extended and it is not uncommon for the PMA review process to take three years or longer from the time the application is filed with the FDA.

The FDA may remove our devices from the market or enjoin them from commercial distribution if safety or effectiveness problems develop. Further, we may not be able to obtain additional 510(k) clearances or pre-market approvals for new products or for modifications to, or additional indications for, our existing products in a timely fashion, or at all. Delays in obtaining future clearances or approvals would adversely affect our ability to introduce new or enhanced products in a timely manner, which in turn would harm our revenue and future profitability. We have made modifications to our devices in the past and may make additional modifications in the future that we believe do not or will not require additional clearances or approvals. If the FDA disagrees, and requires new clearances or approvals for the modifications, we may be required to recall and to stop marketing the modified devices. If any of these events occurs or if the FDA takes other enforcement actions, we may not be able to provide our customers with the products they require on a timely basis, our reputation could be harmed, and we could lose customers and suffer reduced revenues and increased costs.

We also are subject to numerous post-marketing regulatory requirements, including the FDA's quality system regulations, which relate to the design, manufacture, packaging, labeling, storage, installation and servicing of our products, labeling regulations, medical device reporting regulations and correction and removal reporting regulations. Our failure or the failure by any manufacturer of our products to comply with applicable regulatory requirements could result in enforcement action by the FDA. FDA enforcement actions relating to post-marketing regulatory requirements or other issues, including any issues arising from the not substantially equivalent letter described above, may include any of the following:

·warning letters, untitled letters, fines, injunctions, product seizures, consent decrees and civil penalties;

·requiring repair, replacement, refunds, customer notifications or recall of our products;

- imposing operating restrictions, suspension or shutdown of production;

- refusing our requests for 510(k) clearance or PMA approval of new products, new intended uses, or modifications to existing products;

- requesting voluntary rescission of 510(k) clearances or withdrawing PMA approvals that have already been granted; and

- criminal prosecution.

If any of these events were to occur, they could harm our reputation, our ability to generate revenues and our profitability.

Also, from time to time, legislation is introduced into Congress that could significantly change the statutory provisions governing the approval, manufacturing and marketing of medical devices. FDA regulations and guidance are often revised or reinterpreted by the agency in ways that may significantly affect our business and our products. It is impossible to predict whether legislative changes will be enacted, or FDA regulations, guidance or interpretations changed, and what the impact of such changes, if any, may be. The FDA has publicly stated that it is reevaluating its longstanding 510(k) review program. It is not clear when the program will be modified and what effect the modified review process will have on our ability to bring our product candidates to market.

We depend on several single source manufacturers to produce our products. Any material adverse changes in our relationships with these manufacturers could prevent us from delivering products to our customers in a timely manner and may adversely impact our future revenues or costs.

We rely on third-party manufacturers to manufacture components of our NC-stat DPNCheck and SENSUS systems, and to fully manufacture the ADVANCE system. In the event that our manufacturers cease to manufacture sufficient quantities of our products or components in a timely manner and on terms acceptable to us, we would be forced to locate alternate manufacturers. Additionally, if our manufacturers experience a failure in their production process, are unable to obtain sufficient quantities of the components necessary to manufacture our products or otherwise fail to meet our quality requirements, we may be forced to delay the manufacture and sale of our products or locate an alternative manufacturer. We may be unable to locate suitable alternative manufacturers for our products or components for which the manufacturing process is relatively specialized, on terms acceptable to us, or at all. We have a manufacturing and supply agreement with Parlex Polymer Flexible Circuits, Inc. for the manufacture of the biosensors for nerve conduction testing for our domestic market. Katecho, Inc. manufactures biosensors for use with our NC-stat DPNCheck devices and manufactures electrodes for SENSUS, and Sunburst EMS, Inc. manufactures electronic boards and other components of our NC-stat DPNCheck and SENSUS products, which we assemble at our corporate headquarters facility to produce completed devices. Sunburst EMS, Inc. also manufactures our ADVANCE System monitors, docking stations, and communication hubs.

We have experienced transient inventory shortages on new products during the initial production ramp-up phase. If any materially adverse changes in our relationships with these manufacturers occur, our ability to supply our customers will be severely limited until we are able to engage an alternate manufacturer or, if applicable, resolve any quality issues with our existing manufacturer. This situation could prevent us from delivering products to our customers in a timely manner, lead to decreased sales or increased costs, or harm our reputation with our customers.

If our manufacturers are unable to supply us with an adequate supply of products as we expand our markets, we could lose customers, our potential future growth could be limited and our business could be harmed.

In order for us to successfully expand our business within the United States and internationally, our contract manufacturers must be able to provide us with substantial quantities of our products in compliance with regulatory requirements, in accordance with agreed upon specifications, at acceptable cost and on a timely basis. Our potential future growth could strain the ability of our manufacturers to deliver products and obtain materials and components in sufficient quantities. Manufacturers often experience difficulties in scaling up production, including problems with production yields and quality control and assurance. If we are unable to obtain sufficient quantities of high quality products to meet customer demand on a timely basis, we could lose customers, our growth may be limited and our business could be harmed.

If we or the manufacturers of our products fail to comply with the FDA’s quality system regulation, the manufacturing and distribution of our products could be interrupted, and our product sales and operating results could suffer.

We and our contract manufacturers are required to comply with the FDA's quality system regulation, or QSR, which is a complex regulation that governs the procedures and documentation of the design, testing, production, control, quality assurance, labeling, packaging, sterilization, storage and shipping of ou