UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

DIVISION OF
CORPORATION FINANCE

September 4, 2014

Via E-mail
Michael DeMane
Chief Executive Officer
Nevro Corp.
4040 Campbell Avenue
Menlo Park, CA 94025

Re: Nevro Corp.
Draft Registration Statement on Form S-1
Submitted August 8, 2014
CIK No. 0001444380

Dear Mr. DeMane:

We have reviewed your draft registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by providing the requested information and either submitting an amended draft registration statement or publicly filing your registration statement on EDGAR. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing the information you provide in response to these comments and your amended draft registration statement or filed registration statement, we may have additional comments.

Prospectus

1. Please revise your disclosure to present it from the perspective an investor who may not be an expert in your industry. For example, your disclosure on page 1 about a non-inferiority study, primary and secondary endpoints, and low frequency stimulation typically between 40Hz and 60Hz, and your disclosure on page 2 about a Visual Analog Scale appears to assume that readers already know the meanings of the disclosed terms and their significance.

Prospectus Summary, page 1

2. Please revise your prospectus summary substantially to (1) avoid repetition of lengthy disclosure that appears in subsequent sections of your document, such as on pages 77-83,

and (2) relocate unnecessary detail that overwhelms the most important aspects of the offering and is more appropriate for a subsequent section of your document. For guidance, please see sample comments 28 and 29 at the end of Updated Staff Legal Bulletin No. 7 (June 7, 1999). Please also avoid unnecessary repetition within your summary. For example, we note multiple references within your summary to a $1.5 billion market.

3. Please revise the disclosure on page 1 to highlight your statement on page 11 that you expect to incur losses for the foreseeable future.

4. If you elect to highlight in your prospectus summary your revenue growth, please balance the statements with equally prominent disclosure of your statement currently on page 18 regarding not expecting to continue this rate of revenue growth.

5. With a view toward balanced disclosure of the key highlights mentioned on pages 1-2 and pages 77-78, please tell us whether your studies have revealed any material disadvantages. Also, if your studies have not yet generated statistically significant long-term results, please balance your summary to make the clear the significance of the absence of such results.

6. Given your disclosure on page 26 that the industry and market data is so uncertain as to require a risk factor, please tell us why you believe it is appropriate to highlight the data in your prospectus summary.

7. Please tell us whether any competitive products provide pain relief without paresthesia.

Overview, page 1

8. Please revise the first sentence to state in concrete, everyday words what your "evidence-based neuromodulation platform" is.

9. Please revise your reference to FDA acceptance of the premarket approval application to remove any implication that your product has been approved for sale in the United States, if the product has not been so approved. Please also balance your disclosure in the first paragraph regarding your preparations to launch in 2016 with equally prominent disclosure of your statement on page 105 regarding the potential that the FDA process could take several years.

Corporate Information, page 6

10. Please supplementally provide us with copies of all written communications, as defined in Rule 405 under the Securities Act, that you, or anyone authorized to do so on your behalf, present to potential investors in reliance on Section 5(d) of the Securities Act,

whether or not they retain copies of the communications. Similarly, please supplementally provide us with any research reports about you that are published or distributed in reliance upon Section 2(a)(3) of the Securities Act of 1933 added by Section 105(a) of the Jumpstart Our Business Startups Act by any broker or dealer that is participating or will participate in your offering.

The Offering, page 7

11. Please tell us why this section does not reflect the warrants disclosed on page 144.

Risk Factors, page 11

12. Please provide an analysis as to whether the registrant meets the definition of "investment company" under Section 3(a) of the Investment Company Act of 1940 and, if so, whether the registrant is excepted from this definition or is otherwise exempt from registering with the Commission as an investment company. In your response, please provide us with sufficient detail to assess your analysis.

If third-party payors do not provide adequate coverage, page 22

13. With a view toward clarifying the third paragraph of this risk factor, please tell us the cost of your product versus "more established" alternatives and "traditional SCS therapies."

If we fail to receive access to hospital facilities, page 23

14. From your disclosure on page 1, it appears that you are currently selling your product in the European Union. Therefore, it is unclear why you express uncertainty about whether you are required to engage in bidding to sell your product in the European Union. Please revise.

If we fail to comply with our obligations, page 30

15. Please tell us which exhibits to this registration statement represent the two licenses mentioned in the first sentence of this risk factor.

We may be subject to damages, page 30

16. Please highlight in this risk factor the extent to which your management and key employees have worked for competitors. Also, please ensure that your disclosure regarding entities mentioned on pages 112-115 makes clear the extent to which they are involved with competitive technology.

We are required to maintain high levels of inventory, page 33

17. Please briefly highlight in this risk factor the amount and reasons for the 2013 and 2014 inventory write downs.

Our business is subject to extensive government regulation, page 36

18. Refer to the last sentence beginning on page 36. Please clarify whether the reforms if adopted in their current form would subject your product to reassessment.

Sales of a substantial number of shares of our common stock, page 45

19. The first sentence of the last paragraph of this risk factor indicates you have more outstanding shares than disclosed as outstanding on page 7. Please clarify.

Special Note Regarding Forward-Looking Statements, page 49

20. Please tell us the purpose of the last two sentences of this section. Are you seeking to incorporate future disclosure by reference? If so, please tell us the authority on which you rely to do so.

Market, Industry and Other Data, page 51

21. Please tell us whether you commissioned any of the third-party data presented in your document. Include in your response whether the Medtronic survey that you highlight on page 2 is publicly available.

Use of Proceeds, page 52

22. Please disclose the portion of the proceeds that you intend to use for each of the purposes mentioned in the second paragraph on page 52. Please disclose the amount of additional funds that you currently believe are necessary for regulatory approval and completing commercial launch, addressing each separately. See the requirements of Instruction 3 to Regulation S-K Item 504.

Capitalization, page 53

23. Please revise your capitalization table to remove cash and cash equivalents and short-term investments as these items are not part of your capitalization.

Management's Discussion and Analysis, page 60

Critical Accounting Policies, Significant Judgments and Use of Estimates, page 62

Revenue, page 62

24. We note that for the majority of sales when the product is delivered at the point of implantation at hospitals or medical facilities, you recognize revenue upon authorization and completion of the procedure. We also note that for remaining sales directly to hospitals and medical facilities, you recognize at the time of shipment of the product. Please clarify why some hospital and medical facility revenues are recognized upon authorization and completion of the procedure and other hospital and medical facility revenues are recognized upon delivery. Revise your disclosures as appropriate to clarify.

Inventory Valuation, page 62

25. We note the significance of your inventory write-downs during the year ended December 31, 2013. Please explain to us the specific facts and circumstances that resulted in the significant increase in inventory write-downs during 2013 and discuss how you determined the amount of inventory to write-off. Please also revise the filing to enhance the discussion of this critical accounting estimate to explain the significant estimates and assumptions involved in determining the appropriate inventory valuation. Please also discuss how accurate your inventory valuation estimates and assumptions have been in the past, how much those estimates and assumptions have changed in the past, and whether the estimates and assumptions are reasonably likely to change in the future.

Stock-Based Compensation, page 63

26. In order to assist us in evaluating your stock-based compensation, please provide to us the following information about each issuance of stock options in the twelve month period preceding, and the period subsequent to, the most recent balance sheet date:

- Number of shares issued or issuable in the grant;
- Purchase price or exercise price per share;
- Any restriction or vesting terms;
- Management's fair value per share estimate;
- How management determined the fair value estimate;
- Nature of any relationship between the recipient and the company;
- Nature and terms of any concurrent transactions with the recipient; and
- Amount of any recorded compensation element.

When pricing information for this offering is available, please tell us the significant reasons for any material differences between your last fair value determination and the midpoint of the estimated IPO price range. We will delay our assessment of your response pending inclusion of the estimated IPO price in the filing.

27. Further to the above, please explain to us why the estimated fair value of your common stock per share used to determine stock-based compensation expense has remained unchanged from January 31, 2013 through January 16, 2014 despite what appears to be continued development of the underlying business.

Common Stock Valuations, page 64

28. The valuations disclosed in the penultimate paragraph on page 65 appear to be the valuations determined by the "independent third-party" mentioned in the first bullet point on page 64. If so, please name the third party and file its consent. Otherwise, please revise to remove any implication that the February 2013 and 2014 valuations mentioned in the penultimate paragraph on page 65 are the February 2013 and 2014 valuations mentioned in the first bullet point on page 64.

Business, page 77

29. Please disclose in this section the name and any relationship with the customer that accounted for 14% of your revenue according to the first paragraph on page F-10. Also tell us whether that customer was one of the two customers addressed in the last full sentence on page F-9.

Clinical Data, page 83

30. We note your reference to "pending publication" in your table on page 84. With a view toward understating your analysis of the relevance of Section 5 of the Securities Act, please tell us when you expect that the publication will appear.

Communicate what we believe is the compelling clinical efficacy, page 96

31. We note your disclosure on page 1 that your FDA submission did not include a superiority analysis. If the FDA clears your product for marketing, please tell us whether under applicable FDA regulations you believe you will be able to market your product as superior.

Patents, Trademarks and Proprietary Technology, page 101

32. Please disclose when your patents expire.

The Mayo License, page 101

33. Please disclose the significance and effect of the licensed patents versus the patents you own.

34. Please revise clause (1) in the last paragraph of this section to disclose when the last of the licensed patents expire.

Manufacturing and Supply, page 102

35. We note your disclosure in the last paragraph on page 102 that "in the United States" you are required to manufacture your products in compliance with the Quality System Regulation. Please clarify whether you mean that only your United States manufacturing activity must comply with the regulation or whether all manufacturing of your products sold in the United States must comply with the regulation.

International, page 107

36. Please clarify what you mean by "R&TTE" and how it is relevant to your business.

Facilities, page 111

37. We note your facility "for implantation purposes." Please tell us whether your device is implanted in patients in your facility.

Executive Officers, page 112

38. Refer to your disclosure of "Executive Officers" as separate from "Significant Employees." Please note that Rule 405 defines "executive officer" to include your vice president in charge of sales, administration or finance and any other business unit, division or function. Please ensure that your prospectus includes all required disclosure about all individuals who are within this definition of executive officer.

Director Compensation, page 120

39. Refer to the last sentence on please 120. Please confirm that you will disclose the terms of the compensation program before the registration statement is effective.

Terms and Conditions of Employment Agreement with Michael DeMane, page 123

40. Please clarify, if true, that you have agreed to make the severance payments and provide the other "constructive termination" benefits to Mr. DeMane if shareholders choose not to reelect Mr. DeMane to your board of directors.

Principal Stockholders, page 139

41. Please tell us why footnote 11 does not include any of the options mentioned on page 120. Also clarify the terms of the repurchase option.

Description of Capital Stock, page 143

42. Please provide the disclosure required by Regulation S-K Item 201(b)(1). Also, provide us your analysis of whether a class of your stock must be registered pursuant to Section 12(g) of the Exchange Act.

Underwriting, page 155

43. Please provide more specific information regarding the relationships with the underwriters mentioned in the first sentence of the penultimate paragraph on page 159.

44. We note the last sentence of the penultimate paragraph on page 159. Please provide the disclosure required by Regulation S-K Item 508(j). Also please disclose the extent to which the activity you mention in that sentence may be restricted by Regulation M.

General, page 159

45. Please provide us your analysis of how the penultimate sentence of this subsection is consistent with Section 14 of the Securities Act.

Unaudited Pro Forma Balance Sheet Information, page F-8

46. We note that your convertible preferred and redeemable convertible preferred stock automatically converts into common stock upon the closing of an offering of at least $50 million at a price in excess of $1.1575 per share. Please explain to us why you believe these pro forma adjustments are factually supportable by confirming to us that you presently expect to meet such conditions. If management subsequently concludes the conditions may not be satisfied, please revise the filing accordingly.

Recent Sales of Unregistered Securities, page II-2

47. Please clarify which transactions you believe were exempt from registration in reliance on Regulation D, and tell us when you filed the Form D related to those transactions.

Exhibits

48. Please reconcile the date of exhibit 10.3 with the date of the agreement mentioned on page 103.

49. Please file as exhibits the voting agreement, the stockholders agreement and the investor rights agreement mentioned on pages 116, 138 and 143, respectively.

50. Please file the exhibits missing from exhibit 10.12.

General

If you intend to respond to these comments with an amended draft registration statement, please submit it and any associated correspondence in accordance with the guidance we provide in the Division's October 11, 2012 announcement on the SEC website at http://www.sec.gov/divisions/corpfin/cfannouncements/drsfilingprocedures101512.htm.

Please keep in mind that we may publicly post filing review correspondence in accordance with our December 1, 2011 policy (http://www.sec.gov/divisions/corpfin/cfannouncements/edgarcorrespondence.htm). If you intend to use Rule 83 (17 CFR 200.83) to request confidential treatment of information in the correspondence you submit on EDGAR, please properly mark that information in each of your confidential submissions to us so we do not repeat or refer to that information in our comment letters to you.

You may contact Eric Atallah, Staff Accountant, at (202) 551-3639 or Kevin Vaughn, Accounting Branch Chief, at (202) 551-3643 if you have questions regarding comments on the financial statements and related matters. Please contact Tom Jones at (202) 551-3602 or me at (202) 551-3617 with any other questions.

Sincerely,

/s/ Russell Mancuso

Russell Mancuso
Branch Chief

cc (via e-mail): Michael W. Hall, Esq.