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March 7, 2016

Via Edgar
Amanda Ravitz
Assistant Director
Office of Electronics and Machinery
Mail Stop 3030
United States Securities and
Exchange Commission
Washington, D.C. 20549

Re: Pulse Biosciences, Inc.
Registration Statement on Form S-1
Amendment No. 1 filed March 7, 2016
Originally Filed December 22, 2015
File No. 333-208694

Dear Ms. Ravitz:

Our client, Pulse Biosciences, Inc., (the "Company"), has forwarded to me your letter to the Company of January 18, 2016, in which you set forth several comments. I am responding to the comments on behalf of the Company. Each of the comments is reproduced below with the Company's response thereafter.

If you have further questions about this response, please forward them to me as well as to the Company. My email address is ahudders@golenbock.com, and my telephone number is 212-907-7349.

Calculation of Registration Fee Table

1. Please revise footnote 1 to the table to identify the specific subsection of Rule 416 of the Securities Act of 1933 relied upon and to track the language of that subsection.

Response:

The requested disclosure has been provided in Footnote 5 to the Registration Fee Table.

Prospectus Cover Page

2. Please highlight your relationship with MDB Capital Group, LLC mentioned in the last paragraph on page 8.

Response:

The Company relationship with MDB Capital Group, LLC has been added to the prospectus cover page.

Prospectus Summary, page 1

3. Please revise your prospectus summary disclosure on pages 1-6 to avoid repetition of the detail that you include later in your prospectus. For example, we note that much of the disclosure and related footnotes in the summary appear in the disclosure and footnotes beginning on page 26 and elsewhere in your prospectus.

Response:

The summary has been edited to reduce the repetition of information that is found in the business discussion.

4. Please tell us whether you commissioned any of the third-party data presented in your prospectus. Also, provide us with copies of the documents mentioned in the footnotes on pages 1-4.

Response:

The Company did not commission any of the third-party data presented in the prospectus. The data presented has been obtained from public sources. We have disclosed, however, that Dr. Nuccitelli, our Chief Science Officer, authored many of the studies and papers, which funding was under NIH grants, and he authored one paper in 2015, which was while he was employed by the Company.

5. Regarding the authors mentioned in the footnotes throughout your prospectus, please disclose the relationship between you and the authors. For example, we note the references in several footnotes on pages 1-3 to “Nuccitelli R” and your disclosure on page 71 that Dr. Richard Nuccitelli is your Chief Science Officer and your disclosure in footnote (10) on page 75.

Response:

The Company has disclosed in the prospectus summary that various materials cited as supporting documentation for textual statements were authored by Dr. Richard Nuccitelli, who is the Chief Science Officer of the Company. Additionally, the Company has added disclosure about other aspects of Dr. Nuccitelli’s relationship with the Company and the fact that companies he owned are financial predecessors to the Company.

6. Please revise the disclosure in the summary to highlight your disclosure that appears on page 48 that the report of the independent registered public accounting firm on your consolidated financial statements contains an explanatory paragraph regarding your ability to continue as a going concern. Also, disclose your accumulated deficit as of September 30, 2015. In addition, expand your Risk Factors section to include a risk factor to highlight the explanatory paragraph and your accumulated deficit.

Response:

The requested disclosure has been provided in the prospectus summary.

7. If the pre-clinical evidence that you mention in the second paragraph on page 1 and at the bottom of page 2 is the not the result of your studies, revise to remove any implication to the contrary. In this regard, tell us about any relationships you had with the studies, including whether you commissioned the studies.

Response:

The Company has clarified the disclosure about the origin of the NPES discovery, noting that the Old Dominion University, other entities and other scientists have worked on this technology.

8. Please revise the disclosure about the studies mentioned at the bottom of page 2 to clearly state, if true, that the studies are animal trials. In this regard, we note your disclosure at the bottom of page 27 about animal studies.

Response:

The Company has indicated that studies have been on animals, including mice and rat studies.

9. With a view toward balanced disclosure as to what your technology has shown in pre-clinical studies, tell us whether your studies have revealed any material disadvantages.

Response:

The Company has added disclosure in the Summary - Overview indicating some of the problems observed in the animal studies and the pain management issue of the application of the technology. This also has been added to the business section.

10. Please clearly explain each step you must take to reach commercialization of your technology to address the billion dollar markets mentioned on pages 2-4. Also, disclose any material hurdles before you are able to address these markets. If such information is appropriate for your prospectus summary, carefully consider the information that is the most significant, and briefly highlight that information in the summary and include more detailed disclosure elsewhere in your prospectus.

Response:

The Company revised its disclosures to reflect its plans relating to commercialization. The revised disclosure reflects regulatory matters, the role of ongoing clinical trials in shaping its future commercial plans, manufacturing plans and sales and distribution plans. The Company points out that because of the current developmental stage of the Company, it does not have additional details and financial estimates as its ongoing research and development will materially contribute to such decisions.

Emerging Growth Company, page 7

11. 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.

Response:

Please be advised that no written communications have been distributed by the Company or anyone authorized to act on its behalf to potential investors in reliance on Section 5(d) of the Securities Act of 1933, as amended. The only document that has been distributed to potential investors has been the filed registration statement to which this letter refers.

Risk Factors, page 9

12. Please include a risk factor to highlight the risk concerning the amount of your goodwill and intangible assets compared to your total assets.

Response:

The requested disclosure concerning the goodwill and intangible assets has been provided in the risk factor section.

We are subject to regulation in respect of our research and federal funding, page 12

13. Please present as a separate risk factor the risk concerning “March-In rights” mentioned in the last sentence of this risk factor.

Response:

We have included an additional risk factor concerning “march-in rights.”

If we fail to maintain proper and effective internal controls, page 17

14. Please tell us the authority on which you relied to determine the December 2016 date mentioned in the last paragraph of this risk factor.

Response:

The Company has changed the risk factor to eliminate the likely date of our first 10-K. Rather the Company has discussed the future compliance obligation under Section 404 of the Sarbanes-Oxley Act in a general way so as not to imply that the Form 10-K for December 31, 2016 is the only or the first report to be subject to that section of the law, as compliance with that particular statute and all the securities laws will commence with the first report required under the Securities Exchange Act of 1934, after the completion of the offering.

Our Technology, page 29

15. Please revise the disclosure on page 29 to explain the significance of the phrase “electric field strengths of 10-100 kV/cm.” Also, revise the disclosure on page 30 to explain the terms “pyknosis” and “caspace activation” so that they can be understood by an investor not in your industry.

Response:

The Company has added disclosure to the business section, at “Our Technology” to explain the electric field strengths requirements.

Definitions of pyknosis and caspace have been added after the use of those words.

Clinical Trial Results, page 34

16. With a view toward balanced disclosure as to what your technology has shown in clinical studies, tell us whether your studies have revealed any material disadvantages.

Response:

The Company has added disclosure in the business section, under the subpart entitled “Side Effects of NPES Technology” indicating some of the problems observed in the animal studies and the pain management issue of the application of the technology.

License and Other Agreements, page 37

17. Please expand the disclosure in the last paragraph on page 37 to identify the “certain milestones.”

Response:

The ODURF - EVMS license agreement had six milestones. Five of them were satisfied during 2014 and 2015, with one remaining milestone to be satisfied by December 15, 2018. We have changed the disclosure to indicate only the remaining milestone to be satisfied, rather than discuss those that have been fully satisfied.

18. Please expand the disclosure in the first paragraph on page 38 to disclose the term of the license agreement.

Response:

The Company has added the expiration date of the AMI-USC license agreement and made other edits to the description of the license agreement to more fully describe the salient points of the agreement.

19. Please expand the disclosure in this section to discuss the material terms of the license agreement and the amended license agreement with AIM [sic].

Response:

The requested disclosure has been provided in the description of the AMI-USC license agreement.

Management’s Discussion and Analysis of Financial Condition and Results of Operations

Major Transactions in 2014, page 45

20. For the acquisitions of ThelioPulse, BioElectroMed and NanoBlate, you disclose here and on page F-15 in Note 3 that the company utilized the assistance of an outside valuation firm to assist in identifying and evaluating the fair value of the assets acquired. Please revise to clarify the nature and extent of the valuation firm’s involvement and management’s reliance on the work of the valuation firm. Please refer to Question 141.02 of the Compliance and Disclosure Interpretations on Securities Act Sections, which can be found at http://www.sec.gov/divisions/corpfin/guidance/sasinterp.htm.

Response:

The Company has changed the disclosure to make it clear that management made the valuation decisions, based on information from the valuation firm.

Unaudited Pro Forma Condensed Consolidated Balance Sheet, page 59

Pro Forma Adjustments, page 60

21. Please revise adjustment number 4 to more clearly describe the conversion of the notes to common stock, similar to the disclosure provided in the second paragraph of page F-54.

Response:

The comment relates to a section of the document related to an interim period that has been removed from the document because the Registration Statement has been updated with full-year 2015 information. The Company, however, has continued to present the full-year 2014 pro forma information.

22. Please revise adjustment number 7 to disclose that it also includes the allocation of acquisition purchase price adjustments.

Response:

The comment relates to a section of the document related to an interim period that has been removed from the document because the Registration Statement has been updated with full-year 2015 information. The Company, however, has continued to present the full-year 2014 pro forma information.

Unaudited Pro Forma Condensed Consolidated Statement of Operations, page 63

23. We note that the amounts presented for Pulse Biosciences during the period of May 19, 2014 (inception) through December 31, 2014 do not agree to the audited consolidated statement of operations for the same period presented on page F-4. Please revise the pro forma statement of operations to agree to the historical audited Pulse Biosciences statement of operations. Please also revise the summarized pro forma information presented on page 46 to comply.

Response:

The Company calls to the attention of the Staff that the information presented is for each of the unconsolidated entities on a stand-alone-basis. In order to facilitate an investor’s review of the information relative to the information provided, we have added a reconciliation of the Pulse Biosciences, Inc. results as presented in the unaudited pro-forma information to the audited financial statements.

Management, page 65

24. Please expand the disclosure on page 66 to include the business experience of Mr. Levinson from January 2011 to January 2015.

Response:

The business experience of Mr. Levinson has been modified to include that during the period of January 2011 to January 2015.

Executive Compensation, page 70

25. Please update your executive compensation disclosure for the year ended December 31, 2015. Also, update your director compensation disclosure on page 71 for the year ended December 31, 2015.

Response:

The executive and director compensation sections have been updated for the year ended December 31, 2015.

Related Party Transactions, page 73

26. Please tell us whether the proceeds of this offering will be used to pay the amounts owed to the related parties discussed in this section.

Response:

The Company has added disclosure that a portion of the proceeds of this offering may be used to pay the research and collaboration agreement with the Frank Reidy Center, which is located at Old Dominion University. The amount of the funding currently planned to be paid is approximately $1.0 million under the current budget. Any future amount cannot be determined as the Company and the center have not yet determined what work may be agreed upon and what the budget may be for the agreed upon work, if any.

Principal Stockholders, page 74

27. Please disclose the natural person or persons who exercise the sole or shared voting and/or dispositive powers with respect to the shares held by the entities mentioned in the table on page 74.

Response:

The requested disclosure has been provided in the footnotes to the table.

Estimated Use of Proceeds, page 76

28. Please revise to quantify the amount of proceeds to be allocated to each purpose cited in the bullet points on page 76. Also, if the proceeds of this offering would not provide sufficient funds to complete the purposes that you have highlighted, please provide the disclosure required by Instruction 3 to Regulation S-K Item 504.

Response:

The Company reviewed Item 504, Use of Proceeds, of Regulation S-K. The Company has allocated amounts to the general categories of (i) ongoing research and product development and (ii) general corporate purposes. Although the Company recognizes that Instruction 3 to Item 504 indicates that there should be allocation to specific purposes, because it is still in the development stage, the Company believes specific allocation would not be meaningful disclosure. The Company is currently developing a basic technological platform for NPES that it believes will have quite a few specific technological applications. These applications will become more clearly defined as we progress the scientific and development aspects of the basic technology. Therefore, the work the Company is doing for one area of applications will have benefit in other areas, and it is anticipated that such work actually will refine or define that and the other areas of application where the technology will be logically applicable. For example, the Company will devote proceeds to pure science research, but this research in the end will have broad applications among the primary applications that it has identified in the business discussion; oncology, dermatology, ablation applications and veterinarian. The same will be true for the deployment of staff, prototype development, clinical testing and FDA licensing. The Company also believes that each of the steps that it will take to achieve one or more products at this stage of development will be difficult to allocate because so much of what it will have to spend of its monetary resources on in the near and somewhat more distant future will depend on results that are obtained in the very near term with these proceeds. Therefore, there is a fundamental uncertainty of allocation to specific purposes at this stage of the Company's development.

Exhibits

29. Please file as exhibits the license agreement and the research and funding agreements mentioned on page 38 and the lease agreement mentioned on page 44.

Response:

We have attached as exhibits the license agreements and research and funding agreements, which are subject to a request for confidential treatment.

The Company does not consider the lease to be a material agreement. It was entered into in the ordinary course of business, and currently there are only five months of rent left to be paid. There is ample space available for rent in the current location, so it is not material to the conduct of its business.

Exhibit 10.12

30. Please file as separate exhibits the license agreement and the two amendments to the agreement as three separate exhibits to the registration statement.

Response:

The exhibit list has been amended to separate the amendments to the two license agreements into separate exhibit items.

Sincerely,

/s/ Andrew D. Hudders

Andrew D. Hudders,
Golenbock Eiseman Assor Bell & Peskoe LLP