JONATHAN R. ZIMMERMAN
jon.zimmerman@faegrebd.com
(612) 766-8419

July 30, 2012

VIA EDGAR AND FEDERAL EXPRESS

United States Securities and Exchange Commission
Division of Corporate Finance
100 F Street, NE
Washington, DC 20549-3561
Attention: Amanda Ravitz, Assistant Director

Re: Sunshine Heart, Inc. Registration Statement on Form S-1 (File No. 333-182727) (the "Registration Statement")

Ladies and Gentlemen:

On behalf of Sunshine Heart, Inc. (the "Company"), we are transmitting the following responses of the Company to the comments of the Commission's staff (the "Staff") as set forth in the letter of Amanda Ravitz, Assistant Director, dated July 27, 2012 (the "Comment Letter") to the Registration Statement filed with the Securities and Exchange Commission on July 17, 2012 (the "Initial Filing"). We have enclosed for your reference two courtesy copies of Amendment No. 1 to the Registration Statement (the "Amendment") in a clean version and two copies of the Amendment in a version marked to show changes from the Initial Filing.

The responses herein were provided to this firm by the Company. In this letter, we have recited the comment from the Staff in italicized, bold type and have followed the comment with the Company's response in regular type. References in this letter to we, our or us mean the Company or its advisors, as the context may require. All references to page numbers in the Company's responses refer to page numbers in the Amendment.

Prospectus Cover Page

1. ***We note you have not included the number of shares of common stock to be offered. Please note that this is not information which you can exclude from your registration statement in reliance on Securities Act Rule 430A. Refer to Compliance and Disclosure Interpretation (Securities Act Rules) 227.02. Please revise your prospectus to include this information.***

   Company Response: The prospectus has been revised to include the number of shares to be offered.

2. ***We note your disclosure that you are an "emerging growth company," as defined in the Jumpstart Our Business Startups Act. Please revise your prospectus to state your election under Section 107(b) of the JOBS Act:***

- ***if you have elected to opt <u>out</u> of the extended transition period for complying with new or revised accounting standards pursuant to Section 107(b), include a statement that the election is irrevocable; or***

- ***if you have elected to use the extended transition period for complying with new or revised accounting standards under Section 102(b)(1), provide a risk factor explaining that this election allows you to delay the adoption of new or revised accounting standards that have different effective dates for public and private companies until those standards apply to private companies. Please state in your risk factor that, as a result of this election, your financial statements may not be comparable to companies that comply with public company effective dates. Include a similar statement in your critical accounting policy disclosures.***

Also, please supplementally provide us with any written materials that you or anyone authorized to do so on your behalf provides in reliance on Section 5(d) of the Securities Act to potential investors that are qualified institutional buyers or institutional accredited investors. 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 offerings.

Company Response: The Company has elected to use the extended transition period for complying with new or revised accounting standards under Section 102(b)(1) of the JOBS Act. The Company has added disclosure to the risk factor beginning on page 29 of the Registration Statement explaining that this election allows the Company to delay the adoption of new or revised accounting standards that have different effective dates for public and private companies until those standards apply to private companies and explaining that, as a result of this election, the Company's financial statements may not be comparable to companies that comply with public company effective dates. Similar disclosure has been added on page 38 of the Registration Statement discussing the Company's critical accounting policies.

The Company respectfully advises the Staff that it has not provided, and has not authorized anyone on its behalf to provide, any written materials in reliance on Section 5(d) of the Securities Act to potential investors that are qualified institutional buyers or institutional accredited investors. Similarly, the investment banks participating in the offering have advised the Company that they have not published or distributed any research reports about the Company in reliance upon Section 2(a)(3) of the Securities Act of 1933 added by Section 105(a) of the JOBS Act.

Graphics

3. ***Please remove any depictions of products from which you have not derived a material amount of sales. To the extent that you have derived a material amount of sales from the depicted product please:***

- ***tell us whether the depicted product is a prototype or if you could currently sell that product as depicted. If any aspects of your device, such as the driver, are not available in the form factor depicted, please make that clear; and***

- ***revise your graphics to indicate, if true, that your product is in the development stage and has not received FDA approval.***

Company Response: The Company has removed in the inside front cover graphic included in the Initial Filing and replaced it with the Company's logo.

Prospectus Summary

4. ***We note your disclosure that you are pursuing necessary regulatory approvals in the United States and Europe. We also note your recent press releases regarding the completion of a two year follow-up of one patient from your feasibility trial and the receipt of CE Mark approval in Europe. Please revise your disclosure as appropriate.***

Company Response: The Company has revised its disclosure throughout the Registration Statement disclosing that it received CE Mark approval in July 2012 and has revised its disclosure on pages 6 and 49 disclosing that it completed a two-year follow-up of one patient from the Company's feasibility trial.

5. ***Your disclosure appears to indicate that your extra-aortic approach may have competitive advantages over existing intra-aortic methods of pumping assistance in that your product does not come into contact with the patient's blood thereby avoiding clotting issues and ongoing treatment with anti-coagulants. Given that the novel aspect of your product is that it comes into direct contact with the aorta, please balance your disclosure with any possible risks associated with your product physically coming into contact with and pumping that aorta, such as aortic aneurysms, tears or dissections, or clot or plaque displacements, etc., which could be caused by your product. As appropriate, please also revise your risk factors.***

Company Response: The Company has revised pages 3 and 48 of the Registration Statement to disclose that there is a risk of infection in connection with implantation of the Company's system and the risk of erosion of the aortic wall or an aortic rupture exists if a patient contracts a sternal infection and continues to use the Company's system. The Company also revised its disclosure in the Summary, Business and Risk Factors sections to highlight that its system has been implanted in a limited number of patients to date and the potential competitive disadvantages and risks associated with use of its system are not fully known at this time.

The Company respectfully advises the Staff that the results from the Company's clinical activities to date, including its feasibility trial and animal trials, have not revealed a risk of aortic aneurysms, tears or dissections in connection with use of the Company's product in the absence of an infection of the sternum or any other risks that are not discussed in the Registration Statement.

6. ***It appears that the insertion of your device would require surgery under general anesthesia whereas other competing products could be done in a catheterization laboratory with local anesthesia. If true, please balance your disclosure with the advantages and disadvantages of your products versus those of your competitors in terms of the insertion and removal of your product versus those of your competitors. As appropriate, please also revise your risk factors.***

Company Response: The Company respectfully advises the Staff that all of the products with which the Company believes it competes and that the Company is aware of are required, like the Company's system, to be implanted in an operating room using a surgical procedure that requires general anesthesia. The Company is aware of one competitor conducting a trial for a product treating Class III heart failure that can be implanted percutaneously. However, the Company understands that only patients who have suffered a heart attack within 60 days preceding implantation are eligible to have the product implanted. The Company's clinical trial protocol excludes patients who have suffered a heart attack within 90 days of enrollment from eligibility, and the Company's system is designed to target patients with chronic heart failure symptoms rather than to address

acute cardiac situations. The Company therefore believes that the requirement to surgical implant its system in a procedure using general anesthesia is similar to the procedure required for products that treat the Company's target patient population and does not represent a competitive disadvantage.

7. ***Please tell us whether you have any information about your financial position or results during your last completed quarter that would be material to your investors. Also, update your response to this comment as of the date you request that the registration statement be declared effective.***

Company Response: The Company has revised the Registration Statement to include financial information as of and for the three- and six-month periods ended June 30, 2012.

Clinical Development, page 4

8. ***We note the disclosure in your charts in this section. Please revise or add textual disclosure that describes in clear every day terms what the information presented in the charts should mean to an investor who may be unfamiliar with this type of statistical presentation.***

Company Response: The Company has added textual disclosure to pages 4 and 49 of the Registration Statement to provide additional detail on the information presented in the applicable charts.

The Company acknowledges that (i) the Company is responsible for the adequacy and accuracy of the disclosure in the filing, (ii) Staff comments or changes to disclosure in response to Staff comments do not foreclose the Commission from taking any action with respect to the filing; and (iii) the Company may not assert Staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please do not hesitate to call me at 612-766-8419 if you have any questions or comments regarding the foregoing or if we can be of service in facilitating your review of this filing.

Sincerely,

/s/ *Jonathan R. Zimmerman*

Jonathan R. Zimmerman

Enclosures

cc: Tim Buchmiller, Securities and Exchange Commission (w/ encl.)
David Rosa, Chief Executive Officer, Sunshine Heart, Inc. (w/out encl.)
Jeffrey Mathiesen, Chief Financial Officer, Sunshine Heart, Inc. (w/out encl.)