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February 1, 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 10 (File No. 001-35312) (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 January 6, 2012 (the "Comment Letter"). We have enclosed for your reference two courtesy copies of Amendment No. 3 to the Registration Statement (the "Amendment") in a clean version and two copies of the Amendment in a version marked to show changes from Amendment No. 2 to the Registration Statement.

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.

Clinical Development, page 2

1. ***We note your disclosure that you have not yet implanted any additional patients permitted by the FDA. Please revise to clarify whether you plan on implanting the 20 additional patients and adding the two centers, and if so, when you plan on doing so. Please also clarify if these additional patients and two centers would be part of the "pivotal trial."***

Company Response: The Company has not implanted any additional patients, and currently does not have plans to implant any additional patients, permitted by the FDA's April 2011 approval. If the Company implants any additional patients permitted by this approval, the patients would be part of the Company's feasibility trial and would not be included in the results for the Company's planned pivotal trial. The additional centers approved by the FDA in April 2011 for the feasibility trial might participate in the Company's planned pivotal trial, but the protocol for the planned pivotal trial remains subject to FDA approval and the inclusion of any particular center in the pivotal trial cannot be determined with certainty at this time. Please see the additional disclosure on this matter on page 2.

Manufacturers and Suppliers, page 3

2. ***We note your response to prior comment 5. However, given your disclosure that, in the short term, each of your suppliers is material to your operations, please tell us whether you have any agreements with your suppliers and if so, how these agreements are not material. In addition, please expand your risk factor disclosure to reflect your reliance on single source suppliers.***

Company Response: The Company revised page 3 to clarify that, while critical components of its product are supplied through single sources, the Company believes it could find alternative suppliers for each component without materially interrupting production of the Company's product at current levels. The Company believes there is one exception to the foregoing description. The Company identified that exception on page 3 and filed a copy of the Company's agreement with that supplier as an exhibit to the Amendment and requested confidential treatment for portions thereof. The Company further respectfully advises the Staff that, with respect to the components used in the Company's product other than the balloon, the Company previously has obtained such components from sources other than the Company's current supplier or previously has manufactured the component itself. Based on its relationship with prior suppliers and the Company's prior manufacturing experience, the Company has identified alternative supply sources that would allow it, if necessary, to obtain supplies of all components other than the balloon from sources other than current suppliers without materially interrupting the Company's business. The Company further respectfully advises the Staff that the Company's supply agreements that are not filed as exhibits to the Amendment do not contain minimum purchase obligations or similar financial commitments of the Company, and therefore if the Company decided or needed to source the applicable components from persons that currently are not providing components to the Company, the Company could do so without triggering a material financial obligation.

The Company revised page 10 of its risk factor disclosure to state that the Company does not second source any components of its product.

Executive Compensation, page 33

3. ***Please update your executive compensation disclosure for the fiscal year ended December 31, 2011.***

Company Response: In response to the Staff's comment, the Company has revised the executive compensation disclosure for the Company's six-month fiscal year ended December 31, 2011 (the "Stub Year"). Consistent with Regulation S-K Compliance and Disclosure Interpretation 217.05, the summary compensation table in the Amendment includes compensation information for the 12-month fiscal year ended June 30, 2011 and for the Stub Year for the Company's named executive officers for the Stub Year. Similarly, the director

compensation table in the Amendment also includes compensation information for the 12-month fiscal year ended June 30, 2011 and for the Stub Year for the individuals who served as directors of the Company during the Stub Year.

4. ***We note your response to prior comment 9. Please provide us with your analysis as to whether the company benchmarks the salaries of Dr. Peters and Debra Kridner. See Regulation S-K Compliance and Disclosure Interpretation 118.05. If the company does benchmark these salaries, please identify the component companies that make up the compensation peer group and the basis for selecting the peer group.***

Company Response: The Company respectfully advises the Staff that the Company's Board of Directors is responsible for determining Dr. Peters' and Ms. Kridner's compensation, including base salaries, on an annual basis. The Board makes this determination based in part on the salary recommendation prepared by the chief executive officer. The Board does not consult compensation data about other companies as a reference point on which — either wholly or in part — to base, justify or provide a framework for compensation decisions regarding Dr. Peters or Ms. Kridner. While the chief executive officer might evaluate compensation paid to other executives as one factor when formulating compensation recommendations to the Board, the Board

members do not consider any information regarding third party compensation practices that the chief executive officer might consult when formulating his recommendations.

The Company further respectfully advises the Staff that the Company's chief executive officer uses any data he collects about third-party compensation practices as one factor that is neither dominant nor binding in his process of recommending compensation he subjectively believes is appropriate. The chief executive officer is free to give no weight to any information he might choose to consult.

The Company also notes for the Staff that the Company is a smaller reporting company as defined in Rule 12b-2 under the Securities Exchange Act of 1934, as amended. Pursuant to the Commission's scaled disclosure requirements, the Company is not obligated to provide disclosure under Item 402(b)(2)(xiv) of Regulation S-K, to which Regulation S-K Compliance and Disclosure Interpretation 118.05 relates. Based on the factors described above, the Company believes its disclosure in the Amendment satisfies its obligation under Item 402(o) of Regulation S-K to provide a narrative description of any material factors necessary to an understanding of the information described in the Summary Compensation Table, and, in any event, that further disclosure under Item 402(b)(2)(xiv) of Regulation S-K and Compliance and Disclosure Interpretation 118.05 would not be necessary if they were applicable.

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 612-766-8134 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/ Matthew R. Kuhn

Matthew R. Kuhn

Enclosures

cc: Allicia Lam, Staff Attorney, Securities and Exchange Commission (w encl.)
Daniel Morris, Special Counsel, Securities and Exchange Commission (w/out encl.)
David Rosa, Chief Executive Officer, Sunshine Heart, Inc. (w/out encl.)
Jeffrey Mathiesen, Chief Financial Officer, Sunshine, Inc. (w/out encl.)