



DIVISION OF  
CORPORATION FINANCE

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

Mail Stop 3030

November 24, 2009

Via U.S. Mail and Fax (408) 541-4192

Andrew D. Miller  
Senior Vice President, Chief Financial Officer  
Cepheid  
904 Caribbean Drive  
Sunnyvale, California 94089-1189

**Re: Cepheid**  
**Forms 10-K and 10-K/A for the fiscal year ended December 31, 2008**  
**Filed February 26, 2009 and October 1, 2009**  
**File No. 000-30755**

Dear Mr. Miller:

We have reviewed your filings and have the following comments. Where indicated, we think you should revise your future filings in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or on any other aspects of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Form 10-K for the fiscal year ended December 31, 2008

Item 1. Business, page 3

1. We note your disclosure that you "are currently the only company to have obtained Clinical Laboratory Improvement Amendments ("CLIA") moderate complexity categorization for an amplified molecular test system and associated specific infectious disease tests on the market in the United States." In your future filings, please explain the competitive significance of this claim.
2. We note your disclosure that the "GeneXpert system represents a paradigm shift in molecular diagnostics in terms of ease-of-use and flexibility, producing accurate results in a timely manner with minimal risk of contamination." Given that several of your competitors appear to offer products similar to yours, please provide us with support for your claim that your product represents a "paradigm shift." Revise your future filings as appropriate. Similarly, please provide us with support for your belief that the "GeneXpert system is currently the only closed, self-contained, fully-integrated and automated system for molecular testing commercially available" and for your disclosure that "to our knowledge, the system is also the only currently available system to offer true random access and on demand test capability for molecular testing."
3. We note your disclosure that "[y]our GeneXpert system can provide rapid results with superior test specificity and sensitivity over comparable systems on the market today that are integrated but have open architectures." Since it is unclear from your current disclosure how your product works, for example whether your detection methods are based on the use of fluorophores or nanoparticles, etc., please advise us as to basis for your statement and revise your future filings as appropriate to more specifically clarify the bases your competitive advantages.

Evaluation of Disclosure Controls and Procedures, page 70

4. We note your disclosure that your "management, including [your] Principal Executive Officer and Principal Financial Officer...concluded that [y]our disclosure controls and procedures are effective to ensure that information required to be disclosed by [you] in the reports filed and submitted under the Securities Exchange Act of 1934 is recorded, processed, summarized and reported to [y]our management including [y]our Principal Executive Officer and Principal Financial Officer, to allow timely decisions regarding timely disclosure." In future filings, revise to clarify, if true, that your officers concluded that your disclosure controls and procedures are also effective to ensure that information required to be disclosed in the reports that you file or submit under the Securities

Exchange Act is accumulated and communicated to your management, including your chief executive officer and chief financial officer, to allow timely decisions regarding required disclosure (emphasis added). Refer to Exchange Act Rule 13a-15(e).

Item 11. Executive Compensation, page 71

5. We note from your disclosure under "Benchmarking" that you have incorporated by reference from page 19 of your proxy statement that "aggregate base salary and cash incentive is at a level that is at approximately the 60<sup>th</sup> percentile of cash compensation paid to executives at peer group companies, and equity-based compensation is also at a level that is at approximately the 60<sup>th</sup> percentile of equity-based compensation to executives at peer group companies." Given that you target the elements of your compensation packages, please briefly discuss in your applicable future filings how each element of compensation you provide to the named executive officers relates to the data you have analyzed from the peer companies and include an analysis of where actual payments under each element of compensation actually fell within the targeted range. If any of your named executive officers are compensated at levels that are materially different from the targeted levels of compensation, please also provide discussion and analysis as to why.
6. We refer to your disclosure under the caption "Equity-Based Long-Term Incentives" on page 21 of the proxy statement that you have incorporated by reference into your Form 10-K. We note minimal, if any, discussion and analysis as to how the annual stock option grants were determined. In your future filings, as applicable, please include substantive analysis and insight into how your Compensation Committee made its stock option grant determinations with respect to each named executive officer. Refer to subparagraphs (b)(1)(iii) and (v) of Item 402 of Regulation S-K. For example, please discuss and analyze how the Compensation Committee determined the actual number of shares underlying the stock options that were awarded to your named executive officers and how and why those awards varied among the named executive officers.

Form 10-K/A for the fiscal year ended December 31, 2008

Item 9A. Controls and Procedures

7. We note that you did not make any revision to Item 9A. of your Form 10-K filed on February 26, 2009. Considering the restatement of your financial statements for the years ended December 31, 2008, 2007 and 2006, please tell us how you

concluded that you did not have any material weaknesses as defined in Rule 1.02 of Regulation S-X and PCAOB Auditing Standards No. 5.

8. As a related matter, please also tell us how you determined that the restatement had no impact on your initial conclusions on Disclosure Controls and Procedures and Internal Control over Financial Reporting, as reported in your Form 10-K filed February 26, 2009.

Form 8-K filed October 28, 2009

9. We note that you present non-GAAP financial measures and related reconciliations in the form of non-GAAP Statements of Operations. The format presents numerous non-GAAP balances and subtotals which have not been individually described to investors in your earnings release. Inclusion of a non-GAAP statement of operations leaves an impression that the non-GAAP presentation represents a comprehensive basis of accounting and gives undue prominence to the non-GAAP financial information. As well, the disclosures about non-GAAP financial measures set forth in Item 10(e)(1)(i) of Regulation S-K are applicable to each individual non-GAAP financial measure presented. Accordingly, in future earnings releases, please delete the non-GAAP statements of operations. If you elect to present non-GAAP financial measures, please provide the reconciliation and narrative disclosures set forth in Item 10(e)(1)(i)(C) and (D) of Regulation S-K for each individual non-GAAP financial measure presented. Refer to also to Instruction 2 of Item 2.02 of Form 8-K.

As appropriate, please respond to these comments within 10 business days or tell us when you will provide us with a response. Please furnish a cover letter with your response that keys your responses to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your responses to our comments.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes all information required under the Securities Exchange Act of 1934 and that they have provided all information investors require for an informed investment decision. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

In connection with responding to our comments, please provide, in writing, a statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;

Andrew Miller  
Cepheid  
November 24, 2009  
Page 5

- 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
- 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.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in our review of your filing or in response to our comments on your filing.

You may contact Praveen Kartholy at (202) 551-3778 or me at (202) 551-3676 if you have questions regarding comments on the financial statements and related matters. Please contact Gabriel Eckstein at (202) 551-3286 or Tim Buchmiller at (202) 551-3635 with any other questions. You may also contact Martin F. James, Senior Assistant Chief Accountant, at (202) 551-3671.

Sincerely,

Brian R. Cascio  
Accounting Branch Chief