UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549-3030

DIVISION OF
CORPORATION FINANCE
Mail Stop 3030

June 30, 2009

Via facsimile and U.S. mail

Kevin D. Green
Vice President, Finance and Chief Accounting Officer
Cerus Corporation
2411 Stanwell Drive
Concord, California 94520

Re: Cerus Corporation
Annual Report on Form 10-K
for the fiscal year ended December 31, 2008
Filed March 13, 2009
File No. 000-21937

Dear Mr. Green:

We have reviewed your letter dated June 5, 2009 and have the following comments. Where indicated, we think you should revise your document in future filings in response to this comment. 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.

Item 1. Business, page 1

1. We have reviewed your response to comment 1 of our letter dated May 21, 2009. In your future filings, as applicable, please include all disclosure that would be material to an investor's understanding of how your product works, including the material portions of the substantive responses you provided to us in response to comment 1.

2. We note from your response to prior comment 1 that your proprietary molecule, amotosalen, forms links between secondary and tertiary structures and also forms "mono-adducts" in addition to helical cross-links. We also note from your response to comment 2 that the efficacy of your inactivation system has been

tested with "cell-free, cell-associated, and integrated HIV sequences in cell assay systems." Since we understand that helicases unwind nucleic acid strands very rapidly when in cells, but in test tube experiments the unwinding is much slower, please tell us whether the various linkages formed between amotosalen and nucleic acids have been demonstrated to prevent replication or translation of the genomes or genes of the pathogens you mention throughout your filing in cellular tests or *in vivo*. We note in this regard your disclosure on page 10 of your Form 10-K that "[b]ased on discussions with the FDA and European regulatory authorities, [you] believe that data … from laboratory and animal studies … will be required to demonstrate the system's efficacy in inactivating pathogens." Please tell us whether you have conducted any efficacy tests using animal models and the results of those tests, if any, in terms of the efficacy of pathogen inactivation using your system. In this regard, please tell us if there are any reasons to believe that the efficacy results from any animal/*in vivo* studies you conduct would show different efficacy results as compared to the results from your laboratory/*in vitro* studies. Also, please tell us why helicase molecules are unable to break the single or cross-links formed between the amotosalen molecules and the nucleic acids when helicases are capable of separating the multiple hydrogen bonds that are typically present between each nucleotide base pair.

3. We note from bullet point 4 of your response to prior comment 1 that "the INTERCEPT technology does not remove inactivated pathogens," such as HIV, HBV and HCV, and from bullet point 5, "that for ethical reasons, the Company has not conducted human testing to determine whether an individual who receives a transfusion containing a pathogen that was inactivated by INTERCEPT might show positive results on antibody tests for the pathogen," and that, although, "[t]he transfusion of blood components treated with the INTERCEPT Blood System would result in such a patient having potential exposure to only a very small inoculum of inactivated viruses," "[s]uch levels of inoculum would be very much below the titers anticipated to be needed to induce a detectable antibody response in diagnostic tests." In your future filings, as applicable, please disclose the quoted portions of your response and provide support for your belief that the treated but unremoved pathogens would not be present in sufficient quantities to induce an immunological response that upon testing would show positive antibody results for the inactivated pathogens such as HIV, HBV and HCV.

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 that keys your responses to our comments and provides any requested supplemental information. Detailed cover letters greatly facilitate our review. Please file your cover letter on EDGAR. Please understand that we may have additional comments after reviewing your amendment and responses to our comments.

You may contact Joe McCann, Staff Attorney, at (202) 551-6262, or me, at (202) 551-3635, with any questions.

Sincerely,

Tim Buchmiller
Senior Attorney