



DIVISION OF
CORPORATION FINANCE

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

August 30, 2010

Mr. Michael J. Lambert
Chief Financial Officer
NuVasive, Inc.
7475 Lusk Boulevard
San Diego, California 92121

Re: NuVasive, Inc.
Form 10-K for the Fiscal Year Ended December 31, 2009
Filed February 26, 2010
File No. 000-50744

Dear Mr. Lambert:

We have reviewed your response filed August 12, 2010 and have the following comment. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter within ten business days by amending your filing, by providing the requested information, or by advising us when you will provide the requested response. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your filing and the information you provide in response to these comments, we may have additional comments.

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Form 10-K for the year ended December 31, 2009

Item 11. Executive Compensation, page 51

1. We note your response to prior comment 6 which appears to describe the targets to be achieved for the bonus pool to be funded. Please tell us, and disclose in future filings, the specific targets related to the named executive officer's bonuses. For example, we note your disclosure on page 21 of the proxy statement that you have incorporated by reference that after the bonus pool is determined, the named executive officers have a potential for an additional bonus upon significant individual and Company over-achievement.

You may contact Julie Sherman, Staff Accountant, at (202) 551-3640 or Jay Webb at (202) 551-3603 if you have any questions regarding comments on the financial statements and related matters. Please contact Alicia Lam, Staff Attorney, at (202) 551-3316 or Jay Mumford, Reviewing Attorney, at (202) 551-3637 if you have questions on any other comments. In this regard, do not hesitate to contact me at (202) 551-3212.

Sincerely,

Jeff Jaramillo
Branch Chief