



DIVISION OF
CORPORATION FINANCE

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

Mail Stop 3030

May 28, 2010

Via U.S. Mail and Fax (858) 332-4994

Mike Bouchard
Vice President of Finance
Illumina, Inc.
9885 Towne Centre Drive,
San Diego, CA 92121

Re: Illumina, Inc.
Form 10-K for the Fiscal Year Ended January 3, 2010
Filed February 26, 2010
File No. 000-30361

Dear Mr. Bouchard:

We have reviewed your filings and have the following comments. Where indicated, we think you should revise your documents in response to these comments. If you disagree, we will consider your explanation as to why our comments are 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 any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Item 11. Executive Compensation, page 50

1. We refer to your disclosure under the caption "Long-Term Equity Compensation" on page 27 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 stock option grants and restricted stock unit 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 and restricted stock unit 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.

Item 13. Certain Relationships and Related Transactions, and Director Independence, page 51

2. We refer to your disclosure under the caption "Certain Relationships and Related Party Transactions" on page 38 of the proxy statement that you have incorporated by reference into your Form 10-K. In future filings, please ensure your disclosure of related party transactions includes all the details of the transaction as required by Item 404(a) of Regulation S-K. For example, your future filings should disclose the amounts involved in the license agreement with Tufts University and you should tell us in your response those amounts.

Definitive Proxy Statement on Schedule 14A filed March 26, 2010
Board's Role in Risk Oversight, page 12

3. We note your disclosure in response to Item 402(s) of Regulation S-K on page 13. Please describe the process you undertook to reach the conclusion that the risks arising from your compensation policies and practices for your employees are not reasonably likely to have a material adverse effect on Illumina.

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 amendments and 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;

Mike Bouchard
Illumina Inc.
May 28, 2010
Page 3

- 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 Allicia Lam at (202) 551-3316 or me at (202) 551-3637 if you have questions on any comments.

Sincerely,

Jay Mumford
Senior Attorney