

Mail Stop 6010

August 2, 2005

David J. Drachman  
President and Chief Executive Officer  
AtriCure, Inc.  
6033 Schumacher Park Drive  
West Chester, Ohio 45069

Re: AtriCure, Inc.  
Amendment No. 2 to Registration Statement on Form S-1  
Filed July 7, 2005  
File No. 333-124197

Dear Mr. Drachman:

We have reviewed your filing and have the following comments. Where indicated, we think you should revise your document 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 any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter

Exhibit 5.1

1. Please confirm that counsel concurs with our understanding that the reference and limitation to "Delaware General Corporation Law" includes the statutory provisions and also all applicable provisions of the Delaware Constitution and reported judicial decisions interpreting these laws. Please file counsel's written confirmation as correspondence on the EDGAR system. Alternatively, you may provide a revised opinion that removes the limitation or clarifies that the reference includes reported judicial decisions and applicable provisions of the Delaware Constitution.

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As appropriate, please amend your registration statement in response to these comments. You may wish to provide us with marked copies of the amendment to expedite our review. Please furnish a cover letter with your amendment 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 amendment and responses to our comments.

You may contact Kristin Lochhead at (202) 942-8972 or Brian Cascio, Accounting Branch Chief, at (202) 942-1791 if you have questions regarding comments on the financial statements and related

matters. Please contact Mary Beth Breslin at (202) 942-2914 or me  
at  
(202) 942-1880 with any other questions.

Sincerely,

Peggy A. Fisher

Assistant Director

cc (via fax): Theodore L. Polin, Esq.  
Alan D. Schnitzer, Esq.

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