

SCHEDULE 13G

Amendment No. 1  
ATRICURE INC  
COMMON STOCK

Cusip #04963C209

Check the appropriate box to designate the rule pursuant to which this  
Schedule is filed:

- Rule 13d-1(b)
- Rule 13d-1(c)
- Rule 13d-1(d)

Cusip #04963C209

Item 1: Reporting Person - FMR LLC

Item 2: (a)

(b)

Item 4: Delaware

Item 5: 0

Item 6: 0

Item 7: 3,616,600

Item 8: 0

Item 9: 3,616,600

Item 11: 10.931%

Item 12: HC

Cusip #04963C209

Item 1: Reporting Person - Abigail P. Johnson

Item 2: (a)

(b)

Item 4: United States of America

Item 5: 0

Item 6: 0

Item 7: 3,616,600

Item 8: 0

Item 9: 3,616,600

Item 11: 10.931%

Item 12: IN

Item 1(a). Name of Issuer:

ATRICURE INC

Item 1(b). Address of Issuer's Principal Executive Offices:

7555 INNOVATION WAY  
MASON, OH 45040  
USA

Item 2(a). Name of Person Filing:

FMR LLC

Item 2(b). Address or Principal Business Office or, if None,  
Residence:

245 Summer Street, Boston, Massachusetts 02210

Item 2(c). Citizenship:

Not applicable

Item 2(d). Title of Class of Securities:

COMMON STOCK

Item 2(e). CUSIP Number:

04963C209

Item 3. This statement is filed pursuant to Rule 13d-1(b) or 13d-2(b)  
or (c) and the  
person filing, FMR LLC, is a parent holding company in accordance with  
Section 240.13d-1(b)(1)(ii)(G). (Note: See Exhibit A).

Item 4. Ownership

(a) Amount Beneficially Owned: 3,616,600

(b) Percent of Class: 10.931%

(c) Number of shares as to which such person has:

(i) sole power to vote or to direct the vote: 0

(ii) shared power to vote or to direct the vote: 0

disposition of: (iii) sole power to dispose or to direct the  
3,616,600

disposition of: (iv) shared power to dispose or to direct the  
0

Item 5. Ownership of Five Percent or Less of a Class.

Not applicable.

Item 6. Ownership of More than Five Percent on Behalf of Another Person.

Various persons have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, the COMMON STOCK of ATRICURE INC. No one other person's interest in the COMMON STOCK of ATRICURE INC is more than five percent of the total outstanding COMMON STOCK.

Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on By the Parent Holding Company.

See attached Exhibit A.

Item 8. Identification and Classification of Members of the Group.

Not applicable.

Item 9. Notice of Dissolution of Group.

Not applicable.

Item 10. Certifications.

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were acquired and are held in the ordinary course of business and were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect.

Signature

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

April 8, 2016  
Date

/s/ Marc R. Bryant  
Signature

Marc R. Bryant

Duly authorized under Power of Attorney effective as of September 23, 2015, by and on behalf of FMR LLC and its direct and indirect subsidiaries\*

\* This power of attorney is incorporated herein by reference to Exhibit 24 to the Form 4 filed by FMR LLC on November 25, 2015, accession number: 0000315066-15-003312

Exhibit A

Pursuant to the instructions in Item 7 of Schedule 13G, the following table lists the identity and Item 3 classification, if applicable, of each relevant entity that beneficially owns shares of the security class being reported on this Schedule 13G.

Entity ITEM 3 Classification

\* Entity beneficially owns 5% or greater of the outstanding shares of the security class being reported on this Schedule 13G.

Abigail P. Johnson is a Director, the Vice Chairman, the Chief Executive Officer and the President of FMR LLC.

Members of the Johnson family, including Abigail P. Johnson, are the predominant owners, directly or through trusts, of Series B voting common shares of FMR LLC, representing 49% of the voting power of FMR LLC. The Johnson family group and all other Series B shareholders have entered into a shareholders' voting agreement under which all Series B voting common shares will be voted in accordance with the majority vote of Series B voting common shares. Accordingly, through their ownership of voting common shares and the execution of the shareholders' voting agreement, members of the Johnson family may be deemed, under the Investment Company Act of 1940, to form a controlling group with respect to FMR LLC.

Neither FMR LLC nor Abigail P. Johnson has the sole power to vote or direct the voting of the shares owned directly by the various investment companies registered under the Investment Company Act ("Fidelity Funds") advised by Fidelity Management & Research Company ("FMR Co"), a wholly owned subsidiary of FMR LLC, which power resides with the Fidelity Funds' Boards of Trustees. Fidelity Management & Research Company carries out the voting of the shares under written guidelines established by the Fidelity Funds' Boards of Trustees.

This filing reflects the securities beneficially owned, or that may be deemed to be beneficially owned, by FMR LLC, certain of its subsidiaries and affiliates, and other companies (collectively, the "FMR Reporters"). This filing does not reflect securities, if any, beneficially owned by certain other companies whose beneficial ownership of securities is disaggregated from that of the FMR Reporters in accordance with Securities and Exchange Commission Release No. 34-39538 (January 12, 1998).

RULE 13d-1(k)(1) AGREEMENT

The undersigned persons, on April 8, 2016, agree and consent to the joint filing on their behalf of this Schedule 13G in connection with their beneficial ownership of the COMMON STOCK of ATRICURE INC at March 31, 2016.

FMR LLC

By /s/ Marc R. Bryant  
Marc R. Bryant

Duly authorized under Power of Attorney effective as of September 23, 2015, by and on behalf of FMR LLC and its direct and indirect subsidiaries\*

Abigail P. Johnson

By /s/ Marc R. Bryant  
Marc R. Bryant

Duly authorized under Power of Attorney effective as of October 12, 2015, by and on behalf of Abigail P. Johnson\*

\* This power of attorney is incorporated herein by reference to Exhibit 24 to the Form 4 filed by FMR LLC on November 25, 2015, accession number: 0000315066-15-003312