

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

SCHEDULE 13D

Under the Securities Exchange Act of 1934
(Amendment No. 1)*

AtriCure, Inc.

(Name of Issuer)

Common Stock, par value \$.001

(Title of Class of Securities)

04963C209

(CUSIP Number)

Michael D. Pinnisi
Hudson Executive Capital LP
1185 Avenue of the Americas, 32nd Floor
New York, NY 10036

with a copy to:
David A. Vaughan
Dechert LLP
1095 Avenue of the Americas
New York, NY 10036

(Name, Address and Telephone Number of Person
Authorized to Receive Notices and Communications)

February 12, 2018

(Date of Event Which Requires Filing of This Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of §§240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box.

Note: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See Rule.13d-7 for other parties to whom copies are to be sent.

* The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 (the "Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

1	NAMES OF REPORTING PERSON Hudson Executive Capital LP	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP	(a) <input type="checkbox"/> (b) <input type="checkbox"/>
3	SEC USE ONLY	
4	SOURCE OF FUNDS AF	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDING IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e)	<input type="checkbox"/>
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 2,374,119
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 2,374,119
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 2,374,119	
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES	<input type="checkbox"/>
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES 6.9%(1)	
14	TYPE OF REPORTING PERSON PN, IA	

(1) Calculated based on 34,474,119 shares of common stock, par value \$.001 per share, of AtriCure, Inc., outstanding as of October 30, 2017, as reported in AtriCure, Inc.'s quarterly report on Form 10-Q for the quarter ended September 30, 2017.

CUSIP No. 04963C209		SCHEDULE 13D		Page 3 of 7 Pages
1	NAMES OF REPORTING PERSON HEC Management GP LLC			
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP			(a) <input type="checkbox"/> (b) <input type="checkbox"/>
3	SEC USE ONLY			
4	SOURCE OF FUNDS AF			
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDING IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e)			<input type="checkbox"/>
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware			
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0		
	8	SHARED VOTING POWER 2,374,119		
	9	SOLE DISPOSITIVE POWER 0		
	10	SHARED DISPOSITIVE POWER 2,374,119		
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 2,374,119			
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES			<input type="checkbox"/>
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES 6.9%(2)			
14	TYPE OF REPORTING PERSON OO			

(2) Calculated based on 34,474,119 shares of common stock, par value \$.001 per share, of AtriCure, Inc., outstanding as of October 30, 2017, as reported in AtriCure, Inc.'s quarterly report on Form 10-Q for the quarter ended September 30, 2017.

CUSIP No. 04963C209		SCHEDULE 13D		Page 4 of 7 Pages
1	NAMES OF REPORTING PERSON Douglas L. Braunstein			
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP			(a) <input type="checkbox"/> (b) <input type="checkbox"/>
3	SEC USE ONLY			
4	SOURCE OF FUNDS AF			
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDING IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e)			<input type="checkbox"/>
6	CITIZENSHIP OR PLACE OF ORGANIZATION United States			
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0		
	8	SHARED VOTING POWER 2,374,119		
	9	SOLE DISPOSITIVE POWER 0		
	10	SHARED DISPOSITIVE POWER 2,374,119		
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 2,374,119			
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES			<input type="checkbox"/>
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES 6.9% ⁽³⁾			
14	TYPE OF REPORTING PERSON IN			

⁽³⁾ Calculated based on 34,474,119 shares of common stock, par value \$.001 per share, of AtriCure, Inc., outstanding as of October 30, 2017, as reported in AtriCure, Inc.'s quarterly report on Form 10-Q for the quarter ended September 30, 2017.



ITEM 1. SECURITY AND ISSUER

This first amendment to Schedule 13D ("Amendment No. 1") relates to the Common Stock, par value \$.001 per share (the "Shares"), of AtriCure, Inc., a Delaware corporation (the "Issuer"), and supplements the information set forth in Schedule 13D filed on January 24, 2017 (the "Original Schedule 13D" and together with this Amendment No. 1, the "Schedule 13D"). The principal executive offices of the Issuer are located at 7555 Innovation Way, Mason, OH 45040.

The Reporting Persons (as defined below) beneficially own an aggregate of 2,374,119 Shares (the "Subject Shares"). The Subject Shares represent approximately 6.9% of the issued and outstanding Shares based on 34,474,119 Shares outstanding as of October 30, 2017, as reported in AtriCure, Inc.'s quarterly report on Form 10-Q for the quarter ended September 30, 2017.

ITEM 2. IDENTITY AND BACKGROUND

(a) This statement is being filed by Hudson Executive Capital LP, a Delaware limited partnership ("Hudson Executive"), HEC Management GP LLC, a Delaware limited liability company ("Management GP"), and Douglas L. Braunstein (together with Hudson Executive and Management GP, the "Reporting Persons").

(b) The principal business address of the Reporting Persons is c/o Hudson Executive Capital LP, 1185 Avenue of the Americas, 32nd Floor, New York, NY 10036.

(c) Hudson Executive's principal business is to serve as investment advisor to certain affiliated investment funds (the "HEC Funds"). The principal occupation of Mr. Braunstein is to serve as the Managing Partner of Hudson Executive and the Managing Member of Hudson Executive's general partner, HEC Management GP LLC, a Delaware limited liability company (the "Management GP").

(d) None of the Reporting Persons, nor any of their officers or managing directors, have during the last five years been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors).

(e) None of the Reporting Persons, nor any of their officers or managing directors, have during the last five years been a party to a civil proceeding of a judicial or administrative body of competent jurisdiction which resulted in a judgment, decree or final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violations with respect to such laws.

(f) Hudson Executive is a Delaware limited partnership. Management GP is a Delaware limited liability company. Mr. Braunstein is a citizen of the United States.

ITEM 3. SOURCE AND AMOUNT OF FUNDS OR OTHER CONSIDERATION

Item 3 of this Schedule 13D is amended and restated in its entirety as follows:

As of the date hereof, the Reporting Persons are deemed to beneficially own the Subject Shares as detailed in Items 1 and 5. The aggregate purchase price for the 2,374,119 Subject Shares is \$39,170,361.

The source of funding for the transactions pursuant to which the Reporting Persons obtained beneficial ownership of the Shares was derived from the respective capital of the HEC Funds.

ITEM 4. PURPOSE OF TRANSACTION

The Reporting Persons acquired the Shares over which they exercise beneficial ownership in the belief that the Shares are undervalued and are an attractive investment. Certain of the Reporting Persons have had and may continue to have discussions with the Issuer's management and members of the board of directors of the Issuer (the "Board") to discuss the Issuer's business, strategies and corporate governance. The Reporting Persons have found their conversations to date with the Board and management to be constructive, and may seek to have additional conversations with the management, Board, stockholders of the Issuer, and other persons to discuss the Issuer's business, strategies, corporate governance and other matters related to the Issuer. These discussions have included, and may continue to include, options for enhancing shareholder value through various strategic alternatives including, but not limited to, optimizing the cash flows associated with their existing product portfolio, maximizing the value of and prioritizing the capital allocation for various pipeline products, the evaluation of potential strategic partners, and general corporate matters.

ITEM 5. INTEREST IN SECURITIES OF THE ISSUER

(a) and (b) Information about the number and percentage of Shares beneficially owned by the Reporting Persons is set forth in Item 1, and that information is incorporated by reference herein.

Hudson Executive, as the investment adviser to the HEC Funds, may be deemed to share power to vote or direct the vote of (and share power to dispose or direct the disposition of) the Subject Shares.

By virtue of his role with respect to Hudson Executive and the Management GP, Mr. Braunstein may be deemed to share power to vote or direct the vote of (and share power to dispose or direct the disposition of) the Subject Shares and, therefore, each may be deemed to be a beneficial owner of the Subject Shares.

(c) All transactions in the Shares effected during the past 60 days on behalf of an HEC Fund over which the Reporting Persons have investment discretion are set forth in Exhibit 2 attached hereto and incorporated herein by reference.

(d) The HEC Funds have the right to receive dividends from, and the proceeds from the sale of, the Subject Shares. No other person is known to the Reporting Persons to have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, the Shares.

(e) Not applicable.

ITEM 7. MATERIAL TO BE FILED AS EXHIBITS

Exhibit 1 Joint Filing Agreement of the Reporting Persons
Exhibit 2 Schedule of transactions effected during the last 60 days

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.

Date: February 14, 2018

HUDSON EXECUTIVE CAPITAL LP

By: HEC Management GP LLC, its general partner

By: /s/ Douglas L. Braunstein

Name: Douglas L. Braunstein

Title: Managing Member

HEC MANAGEMENT GP LLC

By: /s/ Douglas L. Braunstein

Name: Douglas L. Braunstein

Title: Managing Member

DOUGLAS L. BRAUNSTEIN

By: /s/ Douglas L. Braunstein

Douglas L. Braunstein

EXHIBIT 1

JOINT FILING AGREEMENT

The undersigned acknowledge and agree that the foregoing statement on Schedule 13D is filed on behalf of each of the undersigned and that all subsequent amendments to this statement on Schedule 13D may be filed on behalf of each of the undersigned without the necessity of filing additional joint filing agreements. The undersigned acknowledge that each shall be responsible for the timely filing of such amendments, and for the completeness and accuracy of the information concerning him or it contained herein and therein, but shall not be responsible for the completeness and accuracy of the information concerning the others, except to the extent that he or it knows that such information is inaccurate.

Date: February 14, 2018

HUDSON EXECUTIVE CAPITAL LP

By: HEC Management GP LLC, its general partner

By: /s/ Douglas L. Braunstein
Name: Douglas L. Braunstein
Title: Managing Member

HEC MANAGEMENT GP LLC

By: /s/ Douglas L. Braunstein
Name: Douglas L. Braunstein
Title: Managing Member

DOUGLAS L. BRAUNSTEIN

By: /s/ Douglas L. Braunstein
Douglas L. Braunstein

EXHIBIT 2

SCHEDULE OF TRANSACTIONS EFFECTED DURING THE LAST 60 DAYS

Party Effecting Transaction	Transaction	Date	Quantity	Average Price
Hudson Executive Capital LP	Buy	12/14/2017	300	\$18.04
Hudson Executive Capital LP	Buy	12/22/2017	5,880	\$18.03
Hudson Executive Capital LP	Buy	12/26/2017	2,929	\$18.04
Hudson Executive Capital LP	Buy	1/5/2018	8,000	\$18.00
Hudson Executive Capital LP	Buy	2/6/2018	49,349	\$15.90
Hudson Executive Capital LP	Buy	2/7/2018	12,000	\$15.97
Hudson Executive Capital LP	Buy	2/9/2018	34,160	\$15.22
Hudson Executive Capital LP	Buy	2/12/2018	240,000	\$15.44
Hudson Executive Capital LP	Buy	2/13/2018	25,000	\$15.68