

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

SCHEDULE 13D

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

AtriCure, Inc.
(Name of Issuer)

Common Stock, par value \$.001
(Title of Class of Securities)

04963C209
(CUSIP Number)

John F. Brown
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)

January 17, 2017
(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 1,855,000
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 1,855,000
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,855,000	
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 5.6% ⁽¹⁾	
14	TYPE OF REPORTING PERSON PN, IA	

⁽¹⁾ Calculated based on 33,239,964 shares of common stock, par value \$.001 per share, of AtriCure, Inc., outstanding as of October 26, 2016, as reported in AtriCure, Inc.'s quarterly report on Form 10-Q for the quarter ended September 30, 2016.

CUSIP No. 04963C209		SCHEDULE 13D		Page 3 of 6 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 1,855,000		
	9	SOLE DISPOSITIVE POWER 0		
	10	SHARED DISPOSITIVE POWER 1,855,000		
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,855,000			
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 5.6% ⁽²⁾			
14	TYPE OF REPORTING PERSON IN			

⁽²⁾ Calculated based on 33,239,964 shares of common stock, par value \$.001 per share, of AtriCure, Inc., outstanding as of October 26, 2016, as reported in AtriCure, Inc.'s quarterly report on Form 10-Q for the quarter ended September 30, 2016.



ITEM 1. SECURITY AND ISSUER

This statement on Schedule 13D relates to the Common Stock, par value \$.001 per share (the "Shares"), of AtriCure, Inc., a Delaware corporation (the "Issuer"). 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 1,855,000 Shares (the "Subject Shares"). The Subject Shares represent approximately 5.6% of the issued and outstanding Shares based on 33,239,964 Shares outstanding as of October 26, 2016, as reported in AtriCure, Inc.'s quarterly report on Form 10-Q for the quarter ended September 30, 2016.

ITEM 2. IDENTITY AND BACKGROUND

(a) This statement is being filed by Hudson Executive Capital LP, a Delaware limited partnership ("Hudson Executive") and Douglas L. Braunstein (together, 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) Neither 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) Neither 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. Mr. Braunstein is a citizen of the United States. Management GP is a Delaware limited liability company.

ITEM 3. SOURCE AND AMOUNT OF FUNDS OR OTHER CONSIDERATION

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 1,855,000 Subject Shares is \$30,714,147.

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.

The Reporting Persons intend to review their respective investment in the Issuer on a continuing basis. Depending on various factors, including, without limitation, the outcome of any discussions referenced above, the Issuer's financial position and strategic direction, actions taken by the Board, price levels of the Shares, other investment opportunities available to the Reporting Persons, conditions in the securities market and general economic and industry conditions, the Reporting Persons may from time to time and at any time in the future take such actions with respect to the investment in the Issuer as they deem appropriate, including: (i) acquiring additional Shares and/or other equity, debt, notes, other securities, or derivative or other instruments that are based upon or relate to the value of the Shares or the Issuer (collectively, "Securities") of the Issuer in the open market or otherwise; (ii) disposing of any or all of their Securities in the open market or otherwise; (iii) engaging in any hedging or similar transactions with respect to the Securities; or (iv) proposing or considering one or more of the actions described in subsections (a) through (j) of Item 4 of Schedule 13D.

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 6. CONTRACTS, ARRANGEMENTS, UNDERSTANDINGS OR RELATIONSHIPS WITH RESPECT TO SECURITIES OF THE ISSUER

Except as described herein, the Reporting Persons have no contracts, arrangements, understandings or relationships (legal or otherwise) with any person with respect to any securities of the Issuer, including but not limited to the transfer or voting of any of the securities, finder's fees, joint ventures, loan or option arrangements, puts or calls, guarantees of profits, division of profits or losses, or the giving or withholding of proxies.

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
Exhibit 3 Power of attorney dated January 15, 2016 by Douglas L. Braunstein

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: January 24, 2017

HUDSON EXECUTIVE CAPITAL LP

By: HEC Management GP, LLC, its general partner

By: /s/ Douglas L. Braunstein*

Name: Douglas L. Braunstein

Title: Managing Member

DOUGLAS L. BRAUNSTEIN

By: /s/ Douglas L. Braunstein*

Douglas L. Braunstein

* by John F. Brown, attorney-in-fact

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: January 24, 2017

HUDSON EXECUTIVE CAPITAL LP

By: HEC Management GP, LLC, its general partner

By: /s/ Douglas L. Braunstein*

Name: Douglas L. Braunstein

Title: Managing Member

DOUGLAS L. BRAUNSTEIN

By: /s/ Douglas L. Braunstein*

Douglas L. Braunstein

* by John F. Brown, attorney-in-fact

EXHIBIT 2

SCHEDULE OF TRANSACTIONS EFFECTED DURING THE LAST 60 DAYS

Party Effecting Transaction	Transaction	Date	Quantity	Average Price
Hudson Executive Capital LP	Buy	11/23/2016	23,000	\$19.21
Hudson Executive Capital LP	Buy	11/25/2016	10,000	\$19.24
Hudson Executive Capital LP	Buy	11/28/2016	21,000	\$19.01
Hudson Executive Capital LP	Buy	11/29/2016	19,000	\$18.49
Hudson Executive Capital LP	Buy	11/30/2016	18,000	\$18.10
Hudson Executive Capital LP	Buy	12/1/2016	5,000	\$17.93
Hudson Executive Capital LP	Buy	12/2/2016	4,000	\$18.81
Hudson Executive Capital LP	Buy	12/6/2016	18,000	\$18.62
Hudson Executive Capital LP	Buy	12/7/2016	18,000	\$18.54
Hudson Executive Capital LP	Buy	12/8/2016	8,000	\$18.48
Hudson Executive Capital LP	Buy	12/9/2016	10,000	\$18.38
Hudson Executive Capital LP	Buy	12/13/2016	8,000	\$18.77
Hudson Executive Capital LP	Buy	12/14/2016	11,000	\$18.48
Hudson Executive Capital LP	Buy	12/15/2016	7,000	\$18.51
Hudson Executive Capital LP	Buy	12/20/2016	1,000	\$18.48
Hudson Executive Capital LP	Buy	1/3/2017	8,000	\$19.21
Hudson Executive Capital LP	Buy	1/4/2017	24,000	\$19.24
Hudson Executive Capital LP	Buy	1/5/2017	20,000	\$19.10
Hudson Executive Capital LP	Buy	1/6/2017	65,800	\$18.87
Hudson Executive Capital LP	Buy	1/9/2017	19,100	\$16.70
Hudson Executive Capital LP	Buy	1/9/2017	81,300	\$16.96
Hudson Executive Capital LP	Buy	1/9/2017	70,000	\$17.02
Hudson Executive Capital LP	Buy	1/9/2017	69,800	\$16.68
Hudson Executive Capital LP	Buy	1/10/2017	12,000	\$16.58
Hudson Executive Capital LP	Buy	1/10/2017	6,900	\$16.64
Hudson Executive Capital LP	Buy	1/10/2017	11,200	\$16.72
Hudson Executive Capital LP	Buy	1/11/2017	18,000	\$16.64
Hudson Executive Capital LP	Buy	1/11/2017	5,000	\$16.71
Hudson Executive Capital LP	Buy	1/12/2017	67,000	\$16.40
Hudson Executive Capital LP	Buy	1/12/2017	19,000	\$16.35
Hudson Executive Capital LP	Buy	1/13/2017	75,300	\$16.24
Hudson Executive Capital LP	Buy	1/17/2017	15,500	\$15.61
Hudson Executive Capital LP	Buy	1/17/2017	16,000	\$15.61
Hudson Executive Capital LP	Buy	1/18/2017	39,000	\$15.36
Hudson Executive Capital LP	Buy	1/19/2017	43,000	\$15.24
Hudson Executive Capital LP	Buy	1/20/2017	49,500	\$15.19
Hudson Executive Capital LP	Buy	1/23/2017	34,000	\$14.99

EXHIBIT 3

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that I, DOUGLAS L. BRAUNSTEIN, hereby make, constitute and appoint each of JOHN F. BROWN and MICHAEL G. STELLWAGEN, acting individually, as my agent and attorney-in-fact for the purpose of executing in my name, (a) in my personal capacity or (b) in my capacity as Managing Partner of, member of or in other capacities with Hudson Executive Capital LP ("Hudson Executive") and each of its affiliates or entities advised by me or Hudson Executive, all documents, certificates, instruments, statements, filings and agreements ("documents") to be filed with or delivered to any foreign or domestic governmental or regulatory body or required or requested by any other person or entity pursuant to any legal or regulatory requirement relating to the acquisition, ownership, management or disposition of securities, futures contracts or other investments, and any other documents relating or ancillary thereto, including without limitation all documents relating to filings with the Commodities Futures Trading Commission and National Futures Association, the United States Securities and Exchange Commission (the "SEC") pursuant to the Securities Act of 1933 or the Securities Exchange Act of 1934 (the "Act") and the rules and regulations promulgated thereunder, including all documents relating to the beneficial ownership of securities required to be filed with the SEC pursuant to Section 13(d) or Section 16(a) of the Act and any information statements on Form 13F required to be filed with the SEC pursuant to Section 13(f) of the Act.

All past acts of the attorneys-in-fact in furtherance of the foregoing are hereby ratified and confirmed.

This power of attorney shall remain in full force and effect until either revoked in writing by the undersigned or until such time as the person or persons to whom power of attorney has been hereby granted cease(s) to be an employee of Hudson Executive or one of its affiliates.

IN WITNESS WHEREOF, the undersigned has duly subscribed these presents as of January 15, 2016.

DOUGLAS L. BRAUNSTEIN

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