FORM 4

## UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

## STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

| l | OMB APPROVAL        |           |  |  |  |  |  |  |  |  |
|---|---------------------|-----------|--|--|--|--|--|--|--|--|
|   | OMB Number:         | 3235-0287 |  |  |  |  |  |  |  |  |
|   | Estimated average b | urden     |  |  |  |  |  |  |  |  |

0.5

hours per response:

|   | Check this box if no longer subject to |
|---|--|
| ١ | Section 16. Form 4 or Form 5           |
|   | obligations may continue. See          |
|   | Instruction 1(h)                       |

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

|   |  |                          |                                  |       |                                |  | ( )  |      |                               |            | · · · / · · ·                |                         |                     |                      |                        |   |                          |                                 |   |  |  |
|---|--|--------------------------|----------------------------------|-------|--------------------------------|--|--|------|-------------------------------|------------|------------------------------|-------------------------|---------------------|----------------------|------------------------|---|--------------------------|---------------------------------|---|--|--|
| Name and Address of Reporting Person*       |  |                          |                                  |       |                                |  | 2. Issuer Name <b>and</b> Ticker or Trading Symbol AtriCure, Inc. [ ATRC ] |      |                               |            |                              |                         |                     |                      |                        | 5. Relationship of Reporting Person(s) to Issuer (Check all applicable) |                          |                                 |   |  |  |
| <u>Kennedy Patricia J</u>                   |  |                          |                                  |       |                                |  | Autouc, me. [ Aire ]   |      |                               |            |                              |                         |                     |                      |                        | Direc   | ctor                     | 10%                             | Owner                                   |  |  |
| ,   | <b>/-</b>  | -                        |                                  |       |                                |  |  |      |                               |            |                              | X                       | Office              | er (give title<br>w) | Othe<br>belov          | r (specify<br>v)  |                          |                                 |   |  |  |
| (Last) (First) (Middle)                     |  |                          |                                  |       |                                |  | 3. Date of Earliest Transaction (Month/Day/Year)                           |      |                               |            |                              |                         |                     |                      |                        |   | VP, GM, International    |                                 |   |  |  |
| 6217 CENTRE PARK DRIVE                      |  |                          |                                  |       |                                | 02/09/2012   |  |      |                               |            |                              |                         |                     |                      |                        |   | V1, GIVI, 1              | incinational                    |   |  |  |
| <u> </u> _                                  |  |                          |                                  |       |                                |  |  |      |                               |            |                              |                         |                     |                      |                        |   |                          |                                 |   |  |  |
| (Street)                                    |  |                          |                                  |       |                                | 4. If Amendment, Date of Original Filed (Month/Day/Year) |  |      |                               |            |                              |                         |                     |                      |                        | 6. Individual or Joint/Group Filing (Check Applicable Line)             |                          |                                 |   |  |  |
| WEST  | D OI   | H 4                      | 15069                            |       |                                |  |  |      |                               |            |                              | ٦                       | X                   | ,                    |                        |   |                          |                                 |   |  |  |
| CHESTE                                      | ER   |                          |                                  |       |                                |  |  |      |                               |            |                              |                         |                     |                      | re than One Re         | porting   |                          |                                 |   |  |  |
|   |  |                          |                                  |       |                                |  |  |      |                               |            |                              |                         |                     | Person               |                        |   |                          |                                 |   |  |  |
| (City)                                      | (51  | ate) (                   | Zip)                             |       |                                |  |  |      |                               |            |                              |                         |                     |                      |                        |   |                          |                                 |   |  |  |
|   | Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned |                          |                                  |       |                                |  |  |      |                               |            |                              |                         |                     |                      |                        |   |                          |                                 |   |  |  |
| 1. Title of Security (Instr. 3) 2. Transact |  |                          |                                  |       |                                | 2  | 2A. Deem   | ned  | 3. 4. Securities Acquired (A) |            |                              |                         |                     | (A) or               |                        | 5. Amo  | ount of                  | 6. Ownership                    | 7. Nature                               |  |  |
|   |  | •                        |                                  | Date  | DaviVas                        | Execution Date,  |  |      |                               |            |                              | Of (E                   | Of (D) (Instr. 3, 4 |                      |                        | Securi<br>Benefi  |                          | Form: Direct<br>(D) or Indirect | of Indirect<br>Beneficial               |  |  |
| (Mon  |  |                          |                                  |       |                                |  | if any<br>(Month/Day/Year)   |      | Code (Instr.   5)             |            | ا (ا                         |                         |                     |                      | Own                    |   | d Following              | (I) (Instr. 4)                  | Ownership                               |  |  |
|   |  |                          |                                  |       |                                |  |  |      | Code                          | Ī.,        | 1                            |                         | (A) or Price        |                      | Repor                  |   | ted<br>action(s)         |                                 | (Instr. 4)                              |  |  |
|   |  |                          |                                  |       |                                |  |  |      |                               | V          | Amount                       |                         | (D)                 | Price                | •                      | (Instr. 3 and 4)  |                          |                                 |   |  |  |
| Common Stock 02/09/                         |  |                          |                                  |       |                                |  |  |      | F                             |            | 683(1)                       | D \$1                   |                     | .05 17,271           |                        | 7,271   | D                        |                                 |   |  |  |
|   | Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned    |                          |                                  |       |                                |  |  |      |                               |            |                              |                         |                     |                      |                        |   |                          |                                 |   |  |  |
|   |  |                          |                                  |       |                                |  |  |      |                               |            | onvertib                     |                         |                     |                      |                        |   |                          |                                 |   |  |  |
| 1. Title of                                 | 2.   | 3. Transaction           | 3A. Deem                         | Date, | 4.<br>Transactio<br>Code (Inst |  | on of  |      | 6. Date Exercisable           |            |                              |                         |                     |                      |                        | ice of  | 9. Number o              |                                 | 11. Nature<br>of Indirect<br>Beneficial |  |  |
| Derivative<br>Security                      | Conversion or Exercise   | Date<br>(Month/Day/Year) | Execution<br>if any<br>(Month/Da |       |                                |  |  |      | Expiration (Month/D           |            |                              | Amount of<br>Securities |                     |                      | Derivative<br>Security |   | derivative<br>Securities | Ownership<br>Form:              |   |  |  |
| (Instr. 3)                                  | Price of   | (monanbayrrear)          |                                  |       | 8)                             |  | Securities   |      | (MOTHER)                      | ay, ic     | .u.,                         | Underlying              |                     |                      | (Instr. 5)             |   | Beneficially             | Direct (D)                      | Ownership                               |  |  |
|   | Derivative   |                          |                                  |       | · '  '                         |  | Acquired   |      |                               |            |                              |                         | rivative            |                      | .   ` ` `              |   | Owned                    | or Indirect                     | (Instr. 4)                              |  |  |
| Security                                    |  |                          |                                  |       |                                | (A) or<br>Disposed                                       |  |      |                               |            | Security (Instr. 3<br>and 4) |                         | <b>'</b>            |                      | Following<br>Reported  | (I) (Instr. 4)  |                          |                                 |   |  |  |
|   |  |                          |                                  |       |                                | of (D)<br>(Instr. 3, 4<br>and 5)                         |  | W    |                               |            |                              | ·,                      |                     |                      |                        | Transaction   | (s)                      |                                 |   |  |  |
|   |  |                          |                                  |       |                                |  |  |      |                               |            |                              |                         |                     |                      |                        | (Instr. 4)  |                          |                                 |   |  |  |
|   |  |                          | ŀ                                |       |                                | +  | <del>.  </del>   |      | Т                             |            | $\vdash$                     | Ι Δ                     | ount                | 1                    |                        |   |                          |                                 |   |  |  |
|   |  |                          |                                  |       |                                |  |  |      |                               |            |                              |                         | or                  |                      |                        |   |                          | 1                               |   |  |  |
|   |  |                          |                                  |       |                                |  |  | Date |                               | Expiration |                              | Nui                     | mber                |                      |                        |   |                          |                                 |   |  |  |
|   |  |                          | Code                             | v     | (A)                            |  | Exercisa   |      | Date                          | Title      |                              | ares                    |                     |                      |                        |   |                          |                                 |   |  |  |

## **Explanation of Responses:**

1. The Reporting Person has elected to transfer these shares to the Company to satisfy the tax withholding obligation incurred upon the vesting and release of shares previously acquired pursuant to a Restricted Stock Award.

/s/ Julie A. Piton as Attorneyin-Fact for Patricia J. Kennedy

02/10/2012

\*\* Signature of Reporting Person

on Date

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

- $^{\star}$  If the form is filed by more than one reporting person, see Instruction 4 (b)(v).
- \*\* Intentional misstatements or omissions of facts constitute Federal Criminal Violations See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB Number.