FORM 4

## UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

| OMB APPROVAL |
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## Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

## STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

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

| 1. Name and Address of Reporting Person*  VAN NOSTRAND ROBERT L  |   |                                      |  |          |   | 2. Issuer Name <b>and</b> Ticker or Trading Symbol YIELD10 BIOSCIENCE, INC. [ YTEN ] |  |      |   |        |  |   |                                   |   | 5. Relationship of Reporting Person(s) to Issuer (Check all applicable) |  |     |  |  |  |
|--|---|--------------------------------------|--|----------|---|--|--|------|---|--------|--|---|-----------------------------------|---|---|--|-----|--|--|--|
| VAN NOSTRAND ROBERT L  |   |                                      |  |          |   |  |  |      |   |        |  |   |                                   |   | Director  | r  |     | 10% Ov   | ner  |  |
|  |   |                                      |  |          | 3. Date of Earliest Transaction (Month/Day/Year) 09/28/2018 |  |  |      |   |        |  |   |                                   |   | Officer (<br>below)   | (give title  |     | Other (s<br>below)   | pecify   |  |
| C/O YIELD10 BIOSCIENCE, INC.   |   |                                      |  |          |   | 03/20/2010   |  |      |   |        |  |   |                                   |   |   |  |     |  |  |  |
| 19 PRESIDENTIAL WAY  |   |                                      |  |          |   | 4. If Amendment, Date of Original Filed (Month/Day/Year)                             |  |      |   |        |  |   |                                   | 6. Individual or Joint/Group Filing (Check Applicable |   |  |     |  |  |  |
| (Street)   |   |                                      |  |          |   |  |  |      |   |        |  |   |                                   | Line)  X Form filed by One Reporting Person           |   |  |     |  |  |  |
| ` ,  |   |                                      | 01801  |          |   |  |  |      |   |        |  |   | Λ                                 | Form filed by More than One Reporting Person          |   |  |     |  |  |  |
| (City)   | (S  | tate)                                | (Zip)  |          |   |  |  |      |   |        |  |   |                                   |   | . 0.00  |  |     |  |  |  |
|  |   | Tal                                  | ole I - Non-   | -Deriva  | tive  | Seci   | urities  | Acq  | juired, D   | isp    | osed of  | f, or Be  | nefici                            | ally  | Owned   |  |     |  |  |  |
| 1. Title of Security (Instr. 3)  2. Transac Date (Month/Da   |   |                                      |  |          |   | r) Ex  | 2A. Deemed<br>Execution Date,<br>if any<br>(Month/Day/Year |      | Code (Instr.  |        | 4. Securities Acquired (A)<br>Disposed Of (D) (Instr. 3,<br>5) |   |                                   |   | Securities<br>Beneficia<br>Owned Fo                                     | curities<br>neficially<br>vned Following   |     | Direct I<br>Indirect I<br>str. 4)  | 7. Nature of Indirect Beneficial Ownership                         |  |
|  |   |                                      |  |          |   |  |  | Code | ,   | Amount | mount (A) or Pi  |   | :e                                | Transacti   | Reported<br>Transaction(s)<br>(Instr. 3 and 4)                          |  |     | Instr. 4)  |  |  |
| Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities) |   |                                      |  |          |   |  |  |      |   |        |  |   |                                   |   |   |  |     |  |  |  |
|  |   |                                      |  |          |   |  |  |      |   |        |  |   |                                   |   | .   |  |     |  |  |  |
| 1. Title of<br>Derivative<br>Security<br>(Instr. 3)  | 2.<br>Conversion<br>or Exercise<br>Price of<br>Derivative<br>Security | 3. Transaction Date (Month/Day/Year) | 3A. Deemed<br>Execution Da<br>if any<br>(Month/Day/Y | ate, Tra | 4.<br>Transaction<br>Code (Instr<br>8)                      |  |  |      | 6. Date Exercisable an<br>Expiration Date<br>(Month/Day/Year) |        | !  | 7. Title and<br>Amount of<br>Securities<br>Underlying<br>Derivative Sec<br>(Instr. 3 and 4) |                                   |   | s. Price of<br>Derivative<br>Security<br>Instr. 5)                      | 9. Number of<br>derivative<br>Securities<br>Beneficially<br>Owned<br>Following<br>Reported<br>Transaction(s) | у   | 10.<br>Ownership<br>Form:<br>Direct (D)<br>or Indirect<br>(I) (Instr. 4) | 11. Nature<br>of Indirect<br>Beneficial<br>Ownership<br>(Instr. 4) |  |
|  |   |                                      |  | Co       | de V  | , (  | (A)  | (D)  | Date<br>Exercisable   |        | Expiration<br>Date   | Title   | Amor<br>or<br>Numl<br>of<br>Share | oer   |   | (Instr. 4)   | (0) |  |  |  |
| Stock<br>Option<br>(right to<br>buy)   | \$1.44  | 09/28/2018                           |  | A        | A   | 3  | 3,396 <sup>(1)</sup>                                       |      | 09/28/2018  | 0      | 9/28/2028  | Common<br>Stock   | 3,39                              | 96  | \$1.33  | 3,396  |     | D  |  |  |

## **Explanation of Responses:**

1. These options were issued to the Reporting Person pursuant to the Issuer's Director Compensation Policy in lieu of \$4,531 of cash compensation for services rendered to the Issuer as a member of its Board of Directors and/or a committee thereof during the third quarter of 2018.

/s/ Megan N. Gates, attorney-

in-fact

\*\* Signature of Reporting Person

10/02/2018

Date

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

- \* 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.