FORM 4

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

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 [*] Delaney William E IV | | | 2. Issuer Name and Ticker or Trading Symbol <u>ASSEMBLY BIOSCIENCES, INC.</u> [<u>ASMB</u>] | 5. Relationship of Reporting Person(s) to Issuer (Check all applicable) Director 10% Owner | | | | | | | |
|--|---|-------|--|--|--|--|--|--|--|--|--|
| (Last) C/O ASSEMBI | (First) (Middle) Y BIOSCIENCES, INC. POINT BLVD, FOURTH FLOOR | | 3. Date of Earliest Transaction (Month/Day/Year) 08/02/2023 | X Officer (give title Other (specify below) below) Chief Scientific Officer | | | | | | | |
| 331 OYSTER I | | | 4. If Amendment, Date of Original Filed (Month/Day/Year) | 6. Individual or Joint/Group Filing (Check Applicable Line) X Form filed by One Reporting Person | | | | | | | |
| SOUTH SAN FRANCISCO | CA | 94080 | Rule 10b5-1(c) Transaction Indication | Form filed by More than One Reporting Person | | | | | | | |
| (City) | (State) | (Zip) | Check this box to indicate that a transaction was made pursuant to a contract, instruction or written plan that is intended to satisfy the affirmative defense conditions of Rule 10b5-1(c). See Instruction 10. | | | | | | | | |
| Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned | | | | | | | | | | | |

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

| 1. Title of Security (Instr. 3) | 2. Transaction Date (Month/Day/Year) | 2A. Deemed Execution Date, if any (Month/Day/Year) | 3. Transac Code (II 8) | | 4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5) | | | 5. Amount of Securities Beneficially Owned Following | 6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 7. Nature of Indirect Beneficial Ownership (Instr. 4) |
|---------------------------------|--|---|---------------------------------|---|--|---------------|--------------------------------|--|--|---|
| | | | Code | v | Amount | (A) or (D) | Price | Reported Transaction(s) (Instr. 3 and 4) | | |
| Common Stock | 08/02/2023 | | S ⁽¹⁾ | | 9,461 | D | \$1.0879 ⁽²⁾ | 142,744 | D | |

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned

(e.g., puts, calls, warrants, options, convertible securities)

| 1. Title of Derivative Security (Instr. 3) | 2. Conversion or Exercise Price of Derivative Security | 3. Transaction Date (Month/Day/Year) | 3A. Deemed Execution Date, if any (Month/Day/Year) | 4. Transaction Code (Instr. 8) | | 5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5) | | 6. Date Exercisable and Expiration Date (Month/Day/Year) | | 7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4) | | 8. Price of Derivative Security (Instr. 5) | 9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4) | 10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 11. Nature of Indirect Beneficial Ownership (Instr. 4) |
|---|---|--|---|---|---|--|-----|--|--------------------|---|--|---|--|--|--|
| | | | | Code | v | (A) | (D) | Date Exercisable | Expiration Date | Title | Amount or Number of Shares | | | | |

Explanation of Responses:

1. The sale reported on this Form 4 represents shares sold by the reporting person to cover tax withholding obligations in connection with the vesting and settlement of restricted stock units. The sale is mandated by an administrative rule adopted by the Compensation Committee of the Issuer's Board of Directors that requires the satisfaction of tax withholding obligations to be funded by a "sell-tocover" transaction and does not represent a discretionary transaction by the reporting person.

2. The price reported in Column 4 is a weighted average price. These shares were sold in multiple transactions at prices ranging from \$1.0801 to \$1.10, inclusive. The reporting person undertakes to provide the Issuer, any security holder of the Issuer, or the staff of the Securities and Exchange Commission, upon request, full information regarding the number of shares sold at each separate price within

Remarks:

/s/ John O. Gunderson, as Attorney-in-Fact

08/03/2023

** Signature of Reporting Person 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.

OMB APPROVAL

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