FORM 4

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

| Washington, [| D.C. 20549 |
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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

OMB APPROVAL 3235-0287 Estimated average burden hours per response: 0.5

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* Okazaki Jason A | | | | | 2. Issuer Name and Ticker or Trading Symbol ASSEMBLY BIOSCIENCES, INC. [ASMB] | | | | | | | | | | all app | | ig Per | 10% Ov | vner | |
|--|---|--|------------------|------------|---|---|--|---------------------------------|--|---------------|--------------------|------------------------------|--|---|---|--|--|-----------|---|--|
| (Last) | (Fir | rst) (M | Middl | e) | 3. Date of Earliest Transaction (Month/Day/Year) | | | | | | | | | | Office below | er (give title v) | | Other (s | specify | |
| C/O ASSEMBLY BIOSCIENCES, INC. | | | | | 05/23/2024 | | | | | | | | | CEO and President | | | | | | |
| TWO TOWER PLACE, 7TH FLOOR | | | | | 4. If Amendment, Date of Original Filed (Month/Day/Year) | | | | | | | | | 6. Individual or Joint/Group Filing (Check Applicable Line) | | | | | | |
| (Street) | | | | | | | | | | | | | X Form filed by One Reporting Person | | | | | | | |
| | SOUTH SAN FRANCISCO CA 94080 | | 0 | | | | | | | | | | | Form filed by More than One Reporting Person | | | | orting | | |
| | | | | | Rul | Rule 10b5-1(c) Transaction Indication | | | | | | | | | | | | | | |
| (City) | (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 | 1 - 1 | Non-Deriva | tive S | Secui | rities | Acc | quire | ed, Di | sposed o | f, or l | Benefici | ally | Own | ed | | | | |
| 1. Title of Security (Instr. 3) 2. Transaction Date (Month/Day/Ye | | | Execution if any | | | | 3. Transaction Code (Instr. 8) | | 4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 ar | | | nd 5) Secu Bene Own | | icially d Following | Forn (D) c Indir | m: Direct or rect (I) | 7. Nature of Indirect Beneficial Ownership | | | |
| | | | | | | | | С | | v | Amount | (A) or (D) | Price | | Reported (I Transaction(s) (Instr. 3 and 4) | | (Inst | ir. 4) | (Instr. 4) | |
| Common Stock 05/23/202- | | | | | .4 | | 5 | | S ⁽¹⁾ | | 549 | D | \$14.933 | .9338(2) | | 16,082(3) | | 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 | ise (Month/Day/Year) if any Code (Month/Day/Year) 8) | | | Transa Code (| sansaction of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5) | | ative rities ired osed | Expiration Date (Month/Day/Year) | | | Amo Secu Unde Deriv | | | | 9. Number derivative Securities Beneficially Owned Following Reported Transaction (Instr. 4) | Ownersh Form: Direct (D or Indirec (I) (Instr. | Ownership | Beneficial Ownership t (Instr. 4) | |
| | | | | | Code | v | (A) | (D) | Date Exe | e rcisable | 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-to-cover" 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 \$14.74 to \$15.20, 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
- 3. Includes 208 shares acquired under the Assembly Biosciences, Inc. Amended and Restated 2018 Employee Stock Purchase Plan on May 14, 2024.

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

05/24/2024

** 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.