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| <b>OMB APPROVAL</b>                          |           |
| OMB Number:                                  | 3235-0287 |
| Estimated average burden hours per response: | 0.5       |

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*<br><u>LOSCALZO JOSEPH</u><br>_____<br>(Last) (First) (Middle)<br><u>C/O IONIS PHARMACEUTICALS, INC.</u><br><u>2855 GAZELLE COURT</u><br>_____<br>(Street)<br><u>CARLSBAD CA 92010</u><br>_____<br>(City) (State) (Zip) | 2. Issuer Name and Ticker or Trading Symbol<br><u>IONIS PHARMACEUTICALS INC [ IONS ]</u> | 5. Relationship of Reporting Person(s) to Issuer (Check all applicable)<br><input checked="" type="checkbox"/> Director 10% Owner<br>Officer (give title below) Other (specify below) |
|   | 3. Date of Earliest Transaction (Month/Day/Year)<br><u>07/01/2018</u>                    |   |
| 4. If Amendment, Date of Original Filed (Month/Day/Year)  |  |   |

**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. Transaction Code (Instr. 8) |   | 4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5) |            |       | 5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4) | 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 |   |  |   |
| Common Stock                    | 07/01/2018                           | 07/01/2018   | M <sup>(1)</sup>               |   | 2,000 <sup>(1)</sup>  | A          | \$0   | 9,752   | D  |   |
| Common Stock                    | 07/03/2018                           | 07/03/2018   | M <sup>(1)</sup>               |   | 667 <sup>(1)</sup>  | A          | \$0   | 10,419  | 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 |  |  |   |  |
| Restricted Stock Units                     | (2)  | 07/01/2018                           | 07/01/2018   | M                              |   | 2,000  |     | (3)  | (3)                       | Common Stock  | 2,000                      | \$0  | 1,999  | D   |  |
| Restricted Stock Units                     | (2)  | 07/03/2018                           | 07/03/2018   | M                              |   | 667  |     | (3)  | (3)                       | Common Stock  | 667                        | \$0  | 2,000  | D   |  |
| Restricted Stock Units                     | (2)  | 07/02/2018                           | 07/02/2018   | A                              |   | 3,555  |     | (4)  | (4)                       | Common Stock  | 3,555                      | \$0  | 3,555  | D   |  |
| Director Stock Option (right to buy)       | \$42.88  | 07/02/2018                           | 07/02/2018   | A                              |   | 16,000   |     | 07/02/2019 <sup>(5)</sup>                                | 07/01/2028 <sup>(5)</sup> | Common Stock  | 16,000                     | \$0  | 16,000   | D   |  |

**Explanation of Responses:**

- Acquired pursuant to vesting and release of shares pursuant to Restricted Stock Unit awards.
- Each Restricted Stock Unit represents a contingent right to receive one share of Ionis common stock, or its equivalent cash value.
- Restricted Stock Units vest in four equal annual installments. Upon vesting, the restricted stock units will be paid out in whole shares of Ionis common stock or cash as may be determined by the Company.
- Grant of July 2, 2018 to reporting person of Restricted Stock Unit Award under the Amended and Restated Ionis Pharmaceuticals, Inc. 2002 Non-Employee Directors' Stock Option Plan. Restricted Stock Units vest in four equal annual installments, the first installment vesting on July 2, 2019. Upon vesting, the restricted stock units will be paid out in whole shares of Ionis common stock or cash as may be determined by the Company. The RSU shall be fully vested on July 2, 2022. The RSU is vested as to 0 shares on July 2, 2018.
- Grant of July 2, 2018 to reporting person of stock options under the Amended and Restated Ionis Pharmaceuticals, Inc. 2002 Non-Employee Directors' Stock Option Plan. The option vests and becomes exercisable in four equal annual installments, the first installment vesting on July 2, 2019. The option shall be fully vested and exercisable on July 2, 2022. The option is exercisable to 0 shares on July 2, 2018.

**Remarks:**

/s/Patrick R. O'Neil, attorney-in-fact 07/03/2018

\*\* 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.

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