

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* <b>CROOKE STANLEY T</b>  (Last) (First) (Middle) <b>C/O IONIS PHARMACEUTICALS, INC.</b> <b>2855 GAZELLE COURT</b>  (Street) <b>CARLSBAD CA 92010</b>  (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <b>IONIS PHARMACEUTICALS INC [ IONS ]</b>	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) <input checked="" type="checkbox"/> Director 10% Owner <input checked="" type="checkbox"/> Officer (give title below) Other (specify below) <b>Chairman and CEO</b>
	3. Date of Earliest Transaction (Month/Day/Year) <b>10/02/2017</b>	
	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	10/02/2017	10/02/2017	M <sup>(1)</sup>		5,000 <sup>(1)</sup>	A	\$14.69	43,014	D	
Common Stock	10/02/2017	10/02/2017	S <sup>(1)</sup>		5,000 <sup>(1)</sup>	D	\$51.45	38,014	D	
Common Stock	10/02/2017	10/02/2017	M <sup>(1)</sup>		5,000 <sup>(1)</sup>	A	\$14.69	43,014	D	
Common Stock	10/02/2017	10/02/2017	S <sup>(1)</sup>		5,000 <sup>(1)</sup>	D	\$52.05	38,014	D	
Common Stock	10/02/2017	10/02/2017	M <sup>(1)</sup>		5,000 <sup>(1)</sup>	A	\$14.69	43,014	D	
Common Stock	10/02/2017	10/02/2017	S <sup>(1)</sup>		5,000 <sup>(1)</sup>	D	\$52.5	38,014	D	
Common Stock	10/02/2017	10/02/2017	M <sup>(2)</sup>		500 <sup>(2)</sup>	A	\$7.25	3,562	I	By wife
Common Stock	10/02/2017	10/02/2017	S <sup>(2)</sup>		500 <sup>(2)</sup>	D	\$51.45	3,062	I	By wife
Common Stock	10/02/2017	10/02/2017	M <sup>(2)</sup>		500 <sup>(2)</sup>	A	\$7.25	3,562	I	By wife
Common Stock	10/02/2017	10/02/2017	S <sup>(2)</sup>		500 <sup>(2)</sup>	D	\$52.05	3,062	I	By wife
Common Stock	10/02/2017	10/02/2017	M <sup>(2)</sup>		500 <sup>(2)</sup>	A	\$7.25	3,562	I	By wife
Common Stock	10/02/2017	10/02/2017	S <sup>(2)</sup>		500 <sup>(2)</sup>	D	\$52.5	3,062	I	By wife
Common Stock	10/04/2017	10/04/2017	M <sup>(1)</sup>		5,000 <sup>(1)</sup>	A	\$14.69	43,014	D	
Common Stock	10/04/2017	10/04/2017	S <sup>(1)</sup>		5,000 <sup>(1)</sup>	D	\$54.2	38,014	D	
Common Stock	10/04/2017	10/04/2017	M <sup>(1)</sup>		5,000 <sup>(1)</sup>	A	\$14.69	43,014	D	
Common Stock	10/04/2017	10/04/2017	S <sup>(1)</sup>		5,000 <sup>(1)</sup>	D	\$54.25	38,014	D	
Common Stock	10/04/2017	10/04/2017	M <sup>(2)</sup>		500 <sup>(2)</sup>	A	\$7.25	3,562	I	By wife
Common Stock	10/04/2017	10/04/2017	S <sup>(2)</sup>		500 <sup>(2)</sup>	D	\$54.2	3,062	I	By wife
Common Stock	10/04/2017	10/04/2017	M <sup>(2)</sup>		500 <sup>(2)</sup>	A	\$7.25	3,562	I	By wife
Common Stock	10/04/2017	10/04/2017	S <sup>(2)</sup>		500 <sup>(2)</sup>	D	\$54.25	3,062	I	By wife
Common Stock								725,391	I	By trust

**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				
Employee Stock Option (right to buy)	\$14.69	10/02/2017	10/02/2017	M			15,000	01/02/2017	01/29/2020	Common Stock	15,000	\$0	91,642	D	
Employee Stock Option (right to buy)	\$7.25	10/02/2017	10/02/2017	M			1,500	01/03/2016	01/02/2019	Common Stock	1,500	\$0	3,404	I	By wife
Employee Stock Option (right to buy)	\$14.69	10/04/2017	10/04/2017	M			10,000	01/02/2017	01/29/2020	Common Stock	10,000	\$0	81,642	D	
Employee Stock Option (right to buy)	\$7.25	10/04/2017	10/04/2017	M			1,000	01/03/2016	01/02/2019	Common Stock	1,000	\$0	2,404	I	By wife

**Explanation of Responses:**

- Acquired as a result of exercising a stock option pursuant to Rule 10b5-1 Trading Plan. The purchase and sale reported on this Form 4 was effective pursuant to Rule 10b5-1 Trading Plan adopted by the reporting person on 6/17/2016.
- Acquired as a result of exercising a stock option pursuant to Rule 10b5-1 Trading Plan. The purchase and sale reported on this Form 4 was effective pursuant to Rule 10b5-1 Trading Plan adopted by the reporting person's wife on 6/17/2016.

**Remarks:**

/s/B. Lynne Parshall, attorney- 10/04/2017  
in-fact

\*\* 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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