

<b>OMB APPROVAL</b>	
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**STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP**

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

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* <u>MacFarlane Katie</u>  (Last) (First) (Middle) <u>C/O RESPIRERX PHARMACEUTICALS INC.</u> <u>126 VALLEY ROAD, SUITE C</u>  (Street) <u>GLEN ROCK NJ 07452</u>  (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <u>RespireRx Pharmaceuticals Inc. [ RSPI ]</u>	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) <input checked="" type="checkbox"/> Director 10% Owner Officer (give title below) Other (specify below)
	3. Date of Earliest Transaction (Month/Day/Year) <u>01/18/2017</u>	
	4. If Amendment, Date of Original Filed (Month/Day/Year)	6. Individual or Joint/Group Filing (Check Applicable Line) <input checked="" type="checkbox"/> Form filed by One Reporting Person Form filed by More than One Reporting Person

**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				

**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					
Common Stock Options (to purchase shares of Common Stock)	\$3.9	01/18/2017		A		25,000		(1)	01/18/2022	Common Stock 25,000	\$0	25,000	D	
Common Stock Options (to purchase shares of Common Stock)	\$7.3775 <sup>(2)</sup>							(3)	03/31/2021	Common Stock 30,770 <sup>(2)</sup>		30,770 <sup>(2)</sup>	D	
Common Stock Options (to purchase shares of Common Stock)	\$6.396 <sup>(2)</sup>							(4)	08/18/2022	Common Stock 9,231 <sup>(2)</sup>		9,231 <sup>(2)</sup>	D	
Common Stock Options (to purchase shares of Common Stock)	\$8.125 <sup>(2)</sup>							(5)	06/30/2022	Common Stock 6,154 <sup>(2)</sup>		6,154 <sup>(2)</sup>	D	

**Explanation of Responses:**

- These Common Stock Options vest in three installments: 25 percent on January 18, 2017 (the grant date), 25 percent on March 31, 2017, and 50 percent on June 30, 2017.
- The exercise price and number of shares of these securities have been adjusted to reflect the Company's 325-to-1 reverse stock split effective September 1, 2016.
- These Common Stock Options vested in four equal installments: 25 percent on March 31, 2016 (the grant date), 25 percent on June 30, 2016, 25 percent on September 30, 2016, and 25 percent on December 31, 2016.
- These Common Stock Options vested in four equal installments: 25 percent on December 31, 2015, 25 percent on March 31, 2016, 25 percent on June 30, 2016, and 25 percent on September 30, 2016.
- The Common Stock Options vested in three installments: 50 percent on June 30, 2015, 25 percent on September 30, 2015, and 25 percent on December 31, 2015.

/s/ Kathryn MacFarlane 01/20/2017  
 \*\* 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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