

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

OMB APPROVAL	
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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).

<p>1. Name and Address of Reporting Person*</p> <p><u>BARRETT M JAMES</u></p> <p>(Last) (First) (Middle)</p> <p><u>1954 GREENSPRING DRIVE</u> <u>SUITE 600</u></p> <p>(Street)</p> <p><u>TIMONIUM MD 21093</u></p> <p>(City) (State) (Zip)</p>	<p>2. Issuer Name and Ticker or Trading Symbol</p> <p><u>RHYTHM PHARMACEUTICALS, INC. [RYTM]</u></p> <p>3. Date of Earliest Transaction (Month/Day/Year)</p> <p><u>10/10/2017</u></p> <p>4. If Amendment, Date of Original Filed (Month/Day/Year)</p>	<p>5. Relationship of Reporting Person(s) to Issuer (Check all applicable)</p> <p>Director <input checked="" type="checkbox"/> 10% Owner</p> <p>Officer (give title below) Other (specify below)</p> <p>6. Individual or Joint/Group Filing (Check Applicable Line)</p> <p><input checked="" type="checkbox"/> Form filed by One Reporting Person</p> <p>Form filed by More than One Reporting Person</p>
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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	10/10/2017		C		1,402,870	A	(1)	1,432,248	I	See Note 2(2)
Common Stock	10/10/2017		C		2,927,708	A	(1)	4,359,956	I	See Note 2(2)
Common Stock	10/10/2017		P		550,000	A	\$17	4,909,956	I	See Note 2(2)

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				
Series A Preferred Stoc	(1)	10/10/2017		C		1,402,870 ⁽³⁾		(1)	(1)	Common Stock	1,402,870 ⁽³⁾	\$0.00	0	I	See Note 2(2)
Series A-1 Junior Preferred Stock	(1)	10/10/2017		C		2,927,708 ⁽³⁾		(1)	(1)	Common Stock	2,927,708 ⁽³⁾	\$0.00	0	I	See Note 2(2)

Explanation of Responses:

- In connection with the closing of the Issuer's initial public offering, each share of the Issuer's series A convertible preferred stock (the "Series A Preferred") and series A-1 junior preferred stock (the "Series A-1 Preferred") converted into the Issuer's common stock on a 9.17-for-one basis without payment or consideration. The Series A Preferred and the Series A-1 Preferred had no expiration date.
- The Reporting Person is a director of NEA 13 GP, LTD, which is the sole general partner of NEA Partners 13, L.P. ("NEA Partners 13"). NEA Partners 13 is the sole general partner of New Enterprise Associates 13, L.P. ("NEA 13"), which is the direct beneficial owner of the securities. The Reporting Person disclaims beneficial ownership, within the meaning of Section 16 of the Securities Exchange Act of 1934, as amended, or otherwise of such portion of the NEA 13 shares in which the Reporting Person has no pecuniary interest.
- Reflects the number of shares of Series A Preferred and Series A-1 Preferred, as applicable, held by the Reporting Person on an as-converted to common stock basis.

Remarks:

/s/ Sasha Keough, attorney-in-fact 10/10/2017

** 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.

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.