

| OMB APPROVAL | |
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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>Foley Todd</u> <hr/> (Last) (First) (Middle) <u>C/O MPM ASSET MANAGEMENT</u> <u>450 KENDALL STREET</u> <hr/> (Street) <u>CAMBRIDGE MA 02142</u> <hr/> (City) (State) (Zip) | 2. Issuer Name and Ticker or Trading Symbol <u>RHYTHM PHARMACEUTICALS, INC.</u> [RYTM] | 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>05/27/2020</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 | 05/27/2020 | | s ⁽¹⁾ | | 10,148 ⁽²⁾ | D | \$20.13 ⁽³⁾ | 2,090,299 | I | See Footnote ⁽⁴⁾ |
| Common Stock | 05/28/2020 | | s ⁽¹⁾ | | 19,152 ⁽⁵⁾ | D | \$20.19 ⁽⁶⁾ | 2,071,147 | I | See Footnote ⁽⁷⁾ |

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 | | | | | |

Explanation of Responses:

- The sales reported in this Form 4 were effected pursuant to a Rule 10b5-1 trading plan adopted by the reporting person.
- The shares were sold as follows: 9,768 by MPM BioVentures V, L.P. ("BV V") and 380 by MPM Asset Management Investors BV5 LLC ("AM BV5"). MPM BioVentures V GP LLC and MPM BioVentures V LLC ("BV LLC") are the direct and indirect general partners of BV V and BV LLC is the manager of AM BV5. Ansbert Gadick, Luke Evnin and Todd Foley are the members of BV LLC. The Reporting Person disclaims beneficial ownership of the securities except to the extent of his pecuniary interest therein.
- The price in Column 4 is a weighted average sale price. The prices actually received ranged from \$20.00 to \$20.24. The Reporting Person will provide to the issuer, any security holder of the issuer, or the SEC staff, upon request, information regarding the number of shares sold at each price within the range.
- Shares are held as follows: 2,012,131 by BV V and 78,168 by AM BV5. The Reporting Person disclaims beneficial ownership of the securities except to the extent of his pecuniary interest therein.
- Shares were sold as follows: 18,436 by BV V and 716 by AM BV5.
- The price in Column 4 is a weighted average sale price. The prices actually received ranged from \$20.00 to \$20.35. The Reporting Person will provide to the issuer, any security holder of the issuer, or the SEC staff, upon request, information regarding the number of shares sold at each price within the range.
- Shares are held as follows: 1,993,695 by BV V and 77,452 by AM BV5. The Reporting Person disclaims beneficial ownership of the securities except to the extent of his pecuniary interest therein.

Remarks:

/s/ Todd Foley 05/28/2020
 ** 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.