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UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

SCHEDULE 13G

Under the Securities Exchange Act of 1934  
(Amendment No. 1)\*

Lyra Therapeutics, Inc.  
(Name of Issuer)

Common Stock, \$0.001 par value per share  
(Title of Class of Securities)

55234L105  
(CUSIP Number)

December 31, 2023  
(Date of Event which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- Rule 13d-1(b)  
 Rule 13d-1(c)  
 Rule 13d-1(d)

\*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

Continued on following pages  
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CUSIP No. 55234L105	
(1) Names of reporting persons	Nantahala Capital Management, LLC
(2) Check the appropriate box if a member of a group	(a)
(see instructions)	(b)
(3) SEC use only	
(4) Citizenship or place of organization	MA
Number of shares beneficially owned by each reporting person with:	
(5) Sole voting power	0
(6) Shared voting power	4,752,324
(7) Sole dispositive power	0
(8) Shared dispositive power	4,752,324
(9) Aggregate amount beneficially owned by each reporting person	4,752,324
(10) Check if the aggregate amount in Row (9) excludes certain shares (see instructions)	
(11) Percent of class represented by amount in Row (9)	8.9%
(12) Type of reporting person (see instructions)	IA

CUSIP No. 55234L105	
(1) Names of reporting persons	Wilmot B. Harkey
(2) Check the appropriate box if a member of a group	(a)
(see instructions)	(b)
(3) SEC use only	
(4) Citizenship or place of organization	USA
Number of shares beneficially owned by each reporting person with:	
(5) Sole voting power	0
(6) Shared voting power	4,752,324
(7) Sole dispositive power	0
(8) Shared dispositive power	4,752,324
(9) Aggregate amount beneficially owned by each reporting person	4,752,324
(10) Check if the aggregate amount in Row (9) excludes certain shares (see instructions)	
(11) Percent of class represented by amount in Row (9)	8.9%
(12) Type of reporting person (see instructions)	HC

CUSIP No. 55234L105	
(1) Names of reporting persons	Daniel Mack
(2) Check the appropriate box if a member of a group	(a)
(see instructions)	(b)
(3) SEC use only	
(4) Citizenship or place of organization	USA
Number of shares beneficially owned by each reporting person with:	
(5) Sole voting power	0
(6) Shared voting power	4,752,324
(7) Sole dispositive power	0
(8) Shared dispositive power	4,752,324
(9) Aggregate amount beneficially owned by each reporting person	4,752,324
(10) Check if the aggregate amount in Row (9) excludes certain shares (see instructions)	
(11) Percent of class represented by amount in Row (9)	8.9%
(12) Type of reporting person (see instructions)	HC

**Item 1(a). Name of Issuer:**

Lyra Therapeutics, Inc. (the "Issuer").

**Item 1(b). Address of the Issuer's Principal Executive Offices:**

480 ARSENAL WAY WATERTOWN, MA 02472

**Item 2(a). Name of Person Filing**

Nantahala Capital Management, LLC ("Nantahala")  
Wilmot B. Harkey  
Daniel Mack (together the "Reporting Persons")

**Item 2(b). Address of Principal Business Office or, if None, Residence:**

130 Main St. 2<sup>nd</sup> Floor  
New Canaan, CT 06840

**Item 2(c). Citizenship:**

Nantahala is a Massachusetts limited liability company.  
Each of Messrs. Harkey and Mack is a citizen of the United States of America.

**Item 2(d). Title of Class of Securities:**

Common Stock, \$0.001 par value per share (the "Shares").

**Item 2(e). CUSIP Number:**

55234L105

**Item 3. If this statement is filed pursuant to Rule 13d-1(b), or 13d-2(b) or (c), check whether the person filing is a:**

- (a)  Broker or dealer registered under section 15 of the Act (15 U.S.C. 78o).
- (b)  Bank as defined in section 3(a)(6) of the Act (15 U.S.C. 78c).
- (c)  Insurance company as defined in section 3(a)(19) of the Act (15 U.S.C. 78c).
- (d)  Investment company registered under section 8 of the Investment Company Act of 1940 (15 U.S.C. 80a-8).
- (e)  An investment adviser in accordance with §240.13d-1(b)(1)(ii)(E).
- (f)  An employee benefit plan or endowment fund in accordance with §240.13d-1(b)(1)(ii)(F).
- (g)  A parent holding company or control person in accordance with § 240.13d-1(b)(1)(ii)(G).
- (h)  A savings associations as defined in Section 3(b) of the Federal Deposit Insurance Act (12 U.S.C. 1813).
- (i)  A church plan that is excluded from the definition of an investment company under section 3(c)(14) of the Investment Company Act of 1940 (15 U.S.C. 80a-3).
- (j)  Group, in accordance with §240.13d-1(b)(1)(ii)(J).

**Item 4. Ownership:****Item 4(a). Amount Beneficially Owned:**

As of December 31, 2023, Nantahala may be deemed to be the beneficial owner of 4,752,324 Shares held by funds and separately managed accounts under its control, and as the managing members of Nantahala, each of Messrs. Harkey and Mack may be deemed to be a beneficial owner of those Shares. The 4,752,324 Shares includes 702,106 Shares which may be acquired by the Reporting Persons within sixty days through the exercise of warrants.

**Item 4(b). Percent of Class:**

As of December 31, 2023, each of the Reporting Persons may be deemed to be the beneficial owner of 8.9% of the total number of Shares outstanding (based upon information provided by the Issuer on Form 10-Q filed November 7, 2023, there were 52,563,127 Shares outstanding in addition to the 702,106 Shares issuable upon the exercise of the warrants).

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**Item 4(c). Number of shares as to which such person has:**Nantahala Capital Management, LLC

(i)	Sole power to vote or direct the vote	0
(ii)	Shared power to vote or to direct the vote	4,752,324
(iii)	Sole power to dispose or to direct the disposition of	0
(iv)	Shared power to dispose or to direct the disposition of	4,752,324

Each of Messrs. Harkey and Mack

(i)	Sole power to vote or direct the vote	0
(ii)	Shared power to vote or to direct the vote	4,752,324
(iii)	Sole power to dispose or to direct the disposition of	0
(iv)	Shared power to dispose or to direct the disposition of	4,752,324

**Item 5. Ownership of Five Percent or Less of a Class:**

This Item 5 is not applicable.

**Item 6. Ownership of More than Five Percent on Behalf of Another Person:**

This Item 6 is not applicable.

**Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on by the Parent Holding Company:**

Each of Messrs. Harkey and Mack is filing this Schedule 13G as a control person in respect of shares beneficially owned by Nantahala, an investment adviser as described in §240.13d-1(b)(1)(ii)(E). See Item 4(a).

**Item 8. Identification and Classification of Members of the Group:**

This Item 8 is not applicable.

**Item 9. Notice of Dissolution of Group:**

This Item 9 is not applicable.

**Item 10. Certification:**

By signing below each Reporting Person certifies that, to the best of such person's knowledge and belief, the securities referred to above were acquired and are held in the ordinary course of business and were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having such purpose or effect.

**SIGNATURES**

After reasonable inquiry and to the best of my knowledge and belief, the undersigned certifies that the information set forth in this statement is true, complete, and correct.

Date: February 14, 2024

NANTAHALA CAPITAL MANAGEMENT, LLC

By: /s/ Taki Vasilakis

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Taki Vasilakis  
Chief Compliance Officer

/s/ Wilmot B. Harkey

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Wilmot B. Harkey

/s/ Daniel Mack

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Daniel Mack

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