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

SCHEDULE 14A

Proxy Statement Pursuant to Section 14(a) of the Securities Exchange Act of 1934 (Amendment No.)

Filed by the Registrant ⊠
Filed by a Party other than the Registrant o
Check the appropriate box:

- o Preliminary Proxy Statement
- o Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))
- o Definitive Proxy Statement
- x Definitive Additional Materials
- Soliciting Material under §240.14a-12

Voyager Therapeutics, Inc.

(Name of Registrant as Specified In Its Charter)

(Name of Person(s) Filing Proxy Statement, if other than the Registrant)

Payment of Filing Fee (Check the appropriate box):

- x No fee required.
- o Fee computed on table below per Exchange Act Rules 14a-6(i)(1) and 0-11.
 - (1) Title of each class of securities to which transaction applies:
 - (2) Aggregate number of securities to which transaction applies:
 - (3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (set forth the amount on which the filing fee is calculated and state how it was determined):
 - (4) Proposed maximum aggregate value of transaction:
 - (5) Total fee paid:
- o Fee paid previously with preliminary materials.
- O Check box if any part of the fee is offset as provided by Exchange Act Rule 0-11(a)(2) and identify the filing for which the offsetting fee was paid previously. Identify the previous filing by registration statement number, or the Form or Schedule and the date of its filing.
 - (1) Amount Previously Paid:
 - (2) Form, Schedule or Registration Statement No.:
 - (3) Filing Party:
 - (4) Date Filed:

VOYAGER THERAPEUTICS, INC.

SUPPLEMENT TO NOTICE OF ANNUAL MEETING OF STOCKHOLDERS AND DEFINITIVE PROXY STATEMENT FOR THE 2021 ANNUAL MEETING OF STOCKHOLDERS TO BE HELD ON JUNE 3, 2021

May 19, 2021

This supplement (the "Supplement") relates to the proxy statement (the "Proxy Statement") of Voyager Therapeutics, Inc., a Delaware corporation (the "Company"), as filed by the Company with the Securities and Exchange Commission (the "SEC") on April 22, 2021, and furnished to stockholders of the Company in connection with the solicitation of proxies by the board of directors of the Company (the "Board") for the Company's 2021 Annual Meeting of Stockholders (the "Annual Meeting").

Except as specifically set forth in this Supplement, all information set forth in the Proxy Statement continues to apply and should be considered when voting your shares using one of the methods described in the Proxy Statement.

The Proxy Statement contains important additional information, and this Supplement should be read in conjunction with the Proxy Statement.

Departure of G. Andre Turenne

On May 19, 2021 (the "Agreement Date"), the Company and G. Andre Turenne mutually agreed to enter into a Transition, Separation and Release of Claims Agreement (the "Separation Agreement"), pursuant to which Mr. Turenne has resigned from his position of President and Chief Executive Officer and from any and all other positions he holds as an officer and employee of the Company and any of its subsidiaries, effective on the earlier of (i) the date of the Annual Meeting and (ii) such date as may be mutually agreed upon by the Company and Mr. Turenne (such date, the "Separation Date"). Pursuant to the Separation Agreement, Mr. Turenne also resigned from the Board and the boards of directors of any subsidiaries of the Company and from all committees thereof, in each case effective as of immediately following the adjournment of the Annual Meeting.

During the period between the Agreement Date and the Separation Date (the "Transition Period"), Mr. Turenne will continue to serve as President and Chief Executive Officer and has agreed to assist with the transition of his duties and responsibilities. Mr. Turenne will continue to receive his base salary, in effect as of the Agreement Date, and remain eligible to participate in Company benefit plans during the Transition Period. Mr. Turenne has also agreed to provide reasonable and good faith transition assistance for a period of twelve months following the Separation Date, as requested by the Company from time to time.

Pursuant to the terms of the Separation Agreement, the Company has agreed, consistent with Mr. Turenne's existing employment agreement, to (1) make salary continuation payments to Mr. Turenne, in accordance with the Company's regular payroll practices, for a period of twelve months following Mr. Turenne's execution of a release of claims (the "Separation Pay Period") based on Mr. Turenne's annualized base salary in effect on the Separation Date; (2) provide to Mr. Turenne a prorated annual bonus payment for 2021 based on Mr. Turenne's target bonus percentage and his time of employment in 2021 through the Separation Date, paid in equal installments based on the Company's regular payroll practices over the Separation Pay Period; and (3) subject to Mr. Turenne's eligibility for continued coverage under COBRA, pay on Mr. Turenne's behalf the portion of the premium for group health insurance coverage that the Company pays to active and similarly situated employees receiving the same type of coverage, for a period of twelve months following the Separation Date or, if earlier, the end of the calendar month when Mr. Turenne becomes eligible to receive group health insurance coverage under another employer's benefit plan. In addition, pursuant to the terms of the Separation Agreement and effective upon Mr. Turenne's execution of a release of claims, the Company has agreed to accelerate the vesting of all time-based equity awards held by Mr. Turenne by twelve months and to extend the period during which the outstanding and vested stock options held by Mr. Turenne may be exercised to fifteen months following the Separation Date.

The Separation Agreement also provides for, among other things, a release of claims by Mr. Turenne in favor of the Company and its affiliates; continuing confidentiality, non-solicitation and non-competition obligations applicable to Mr. Turenne under his existing confidentiality, noncompetition and assignment agreement with the Company; non-disparagement and cooperation obligations applicable to Mr. Turenne; and non-disparagement obligations applicable to the Company. In connection with the parties' execution of the Separation Agreement, Mr. Turenne's employment agreement with the Company was terminated as of the Agreement Date.

A copy of the Separation Agreement has been filed as Exhibit 10.1 to a Current Report on Form 8-K filed by the Company with the SEC on May 19, 2021.

Departure of Omar Khwaja, M.D., Ph.D.

On May 14, 2021, Omar Khwaja, M.D., Ph.D., the Chief Medical Officer and Head of Research and Development of the Company, resigned from his position of Chief Medical Officer and Head of Research and Development and from any and all other positions he holds as an officer and employee of the Company and any of its subsidiaries, effective May 28, 2021.

Appointment of Michael Higgins as Interim President and Chief Executive Officer

On May 19, 2021, the Company and Michael Higgins, the Chairman of the Board, entered into an employment agreement (the "Higgins Agreement") pursuant to which Mr. Higgins will serve as the Interim President and Chief Executive Officer of the Company, effective as of the Separation Date, and as the principal executive officer of the Company while the Company conducts a search for a permanent Chief Executive Officer. As of the Separation Date, Mr. Higgins will no longer be considered an independent director or be eligible to serve in his current positions on the Audit and Compensation Committees of the Board. Mr. Higgins has agreed to continue to serve as Chairman of the Board during his tenure as Interim President and Chief Executive Officer, subject to his reelection as a Class III director by the stockholders at the Annual Meeting.

Mr. Higgins, age 58, was appointed Chairman of the Board in June 2019. He has been a member of the Board since July 2015. Mr. Higgins is a serial entrepreneur who has helped launch six companies during the past six years. Mr. Higgins has served as Executive Chairman of KinDex Pharmaceutics, Inc., a biotechnology company ("KinDex"), from March 2016 to March 2020 and served as interim Chief Executive Officer of KinDex from 2016 to 2020. Mr. Higgins has served as chairman of the board of directors of Pulmatrix, Inc., a publicly traded biopharmaceutical company, since April 2020, and has served as a board member of Genocea Biosciences Inc., a publicly traded immuno-oncology company, since February 2015; Nocion Therapeutics, Inc., a biopharmaceutical company, since May 2015; Camp4 Therapeutics Corporation, a biopharmaceutical company, since October 2016; and Sea Pharmaceuticals, LLC, a pharmaceutical company, since October 2016. Mr. Higgins served as Entrepreneur-in-Residence at Polaris Partners, an investment company, from 2015 to 2020. From 2003 to 2014, he served as Senior Vice President, Chief Operating Officer at Ironwood Pharmaceuticals Inc, a pharmaceutical company. Prior to 2003, Mr. Higgins held a variety of senior business positions at Genzyme Corporation, including Vice President of Corporate Finance and Vice President of Business Development. Mr. Higgins earned a B.S. from Cornell University and an M.B.A. from the Amos Tuck School of Business at Dartmouth College.

There are no family relationships between Mr. Higgins and any director, executive officer or person nominated or chosen by the Company to become a director or executive officer of the Company. There are no transactions in which Mr. Higgins has an interest requiring disclosure under Item 404(a) of Regulation S-K.

Pursuant to the Higgins Agreement, Mr. Higgins will receive an annualized base salary of \$600,000 and will be entitled to participate in the Company's employee benefit plans, subject to the terms and conditions of such plans. Pursuant to the Higgins Agreement, the Board also approved the grant to Mr. Higgins, effective as of the Separation Date, of a stock option to purchase 115,000 shares of the Company's common stock at an exercise price per share equal to the closing price per share of the Company's common stock on The Nasdaq Global Select Market on the effective date of grant. The option award has a ten-year term and vests monthly over a twelve-month period, subject to Mr. Higgins' continued service to the Company, including as either an officer or director. The option is subject to the terms and conditions of the applicable award agreement and will be granted pursuant to the Company's 2015 Stock Option and Incentive Plan. During his service as Interim President and Chief Executive Officer, Mr. Higgins will not receive any separate cash or equity compensation pursuant to the Company's nonemployee director compensation policy (the "Director Compensation Policy"), including the annual stock option grant made to nonemployee directors in connection with the Annual Meeting.

Mr. Higgins has also executed a standard confidentiality and invention assignment agreement in connection with his employment.

A copy of the Higgins Agreement has been filed as Exhibit 10.2 to a Current Report on Form 8-K filed by the Company with the SEC on May 19, 2021.

Appointment of Glenn Pierce as Interim Chief Scientific Officer

On May 19, 2021, the Company and Glenn Pierce, M.D., Ph.D., a member of the Board, entered into an employment agreement (the "Pierce Agreement") pursuant to which Dr. Pierce will serve as the Interim Chief Scientific Officer of the Company, effective as of the Separation Date, and as an executive officer of the Company while the Company conducts its search for Dr. Khwaja's replacement. As of the Separation Date, Dr. Pierce will no longer be considered an independent director or be eligible to serve in his current position on the Audit Committee of the Board. Dr. Pierce has agreed to continue to serve as a member of the Board during his tenure as Interim Chief Scientific Officer of the Company.

Dr. Pierce, age 66, has been a member of the Board since January 2017. Dr. Pierce has served as consultant at Ambys Medicines, a biotechnology company ("Ambys"), since August 2020 and previously served as Chief Medical Officer of Ambys from August 2018 to August 2020. Since August 2014, Dr. Pierce has served as a consultant to several biotechnology companies. He has served as an Entrepreneur-in-Residence at Third Rock Ventures, LLC, a life sciences venture capital firm focused on the formation, development and strategy of new companies, since January 2016. He retired from Biogen Idec, Inc., a biotechnology company ("Biogen"), in May 2014, where he had worked since March 2009 and most recently served as Senior Vice President leading the Hematology, Cell and Gene Therapies division. Prior to Biogen, he served in a variety of biotech/biopharma firms, including Bayer AG, Inspiration Pharma Ltd., Avigen, Inc., Selective Genetics, Inc., and Amgen, Inc. in the areas of tissue regeneration and hematology research, development, or both. Dr. Pierce is the co-author of more than 150 scientific papers, author of more than 15 patents, and has contributed to the development of several novel marketed proteins. He served on the Medical and Scientific Advisory Council, the Board of Directors and was president of the board of the National Hemophilia Foundation during a span of two decades. Dr. Pierce also served on the Blood Products Advisory Committee at the U.S. Food and Drug Administration and the Committee on Blood Safety and Availability at the U.S. Department of Health and Human Services. He has served on the Board of Directors of publicly traded biopharmaceutical company Global Blood Therapeutics, Inc. since February 2016. Dr. Pierce received a B.A. in Biology, an M.D., and a Ph.D. in immunology, all from Case Western Reserve University in Cleveland, and completed his postgraduate training in pathology and hematology research at Washington University in St. Louis.

There are no family relationships between Dr. Pierce and any director, executive officer or person nominated or chosen by the Company to become a director or executive officer of the Company. There are no transactions in which Dr. Pierce has an interest requiring disclosure under Item 404(a) of Regulation S-K.

Pursuant to the Pierce Agreement, Dr. Pierce will receive an annualized base salary of \$300,000 and will be entitled to participate in the Company's employee benefit plans, subject to the terms and conditions of such plans. Pursuant to the Pierce Agreement, the Board also approved the grant to Dr. Pierce, effective as of the Separation Date, of a stock option to purchase 50,000 shares of the Company's common stock at an exercise price per share equal to the closing price per share of the Company's common stock on The Nasdaq Global Select Market on the effective date of grant. The option award has a ten-year term and vests monthly over a twelve-month period, subject to Dr. Pierce's continued service to the Company, including as either an officer or director. The option is subject to the terms and conditions of the applicable award agreement and will be granted pursuant to the Company's 2015 Stock Option and Incentive Plan. During his service as Interim Chief Scientific Officer, Dr. Pierce will not receive any separate cash or equity compensation pursuant to the Director Compensation Policy, including the annual stock option grant made to nonemployee directors in connection with the Annual Meeting.

Dr. Pierce has also executed a standard confidentiality and invention assignment agreement in connection with his employment.

A copy of the Pierce Agreement has been filed as Exhibit 10.3 to a Current Report on Form 8-K filed by the Company with the SEC on May 19, 2021.

Board Committees and Leadership

In connection with the appointment of Mr. Higgins and Dr. Pierce as executive officers of the Company as described above, the Company is evaluating the composition of the committees of its Board and expects to appoint other existing directors as new members to the Audit and Compensation Committees; to designate a new "audit committee financial expert," as defined under the applicable rules of the SEC; and to name an existing director to serve as independent lead director, in each case on or before the Separation Date.

Voting Matters

This Supplement does not change the proposals to be acted upon at the Annual Meeting, which are described in the Proxy Statement. If you have already submitted your proxy, you do not need to take any action unless you wish to change your vote. If you have already submitted your proxy and wish to change your vote based on any of the information contained in this Supplement, you may revoke your proxy or change your vote at any time before it is voted at the Annual Meeting. Information regarding how to vote your shares and how to revoke your proxy or change your vote is available in the Proxy Statement.