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**United States**  
**Securities and Exchange Commission**  
Washington, D.C. 20549

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**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

Check the appropriate box:

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

**X4 Pharmaceuticals, 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)

- No fee required.
- Fee computed on table below per Exchange Act Rules 14a-6(i)(1) and 0-11.

Title of each class of securities to which transaction applies:

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Aggregate number of securities to which transaction applies:

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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):

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Proposed maximum aggregate value of transaction:

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Total fee paid:

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Fee paid previously with preliminary materials.

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.

Amount Previously Paid:

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Form, Schedule or Registration Statement No.:

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Filing Party:

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Date Filed:

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**X4 PHARMACEUTICALS, INC.**  
**955 Massachusetts Avenue, 4<sup>th</sup> Floor**  
**Cambridge, Massachusetts 02139**

**SUPPLEMENT TO**  
**NOTICE OF ANNUAL MEETING OF STOCKHOLDERS**  
**AND PROXY STATEMENT, DATED APRIL 28, 2020**

**FOR THE VIRTUAL ANNUAL MEETING OF STOCKHOLDERS**  
**TO BE HELD ON JUNE 10, 2020**

This supplement (the “Supplement”) provides updated information with respect to the 2020 Annual Meeting of Stockholders (the “Annual Meeting”) of X4 Pharmaceuticals, Inc. (“X4 Pharmaceuticals”) to be held on June 10, 2020.

On April 28, 2020, X4 Pharmaceuticals commenced distributing to its stockholders a Notice of the 2020 Annual Meeting of Stockholders and Definitive Proxy Statement (the “Notice and Proxy Statement”) for the Annual Meeting. This Supplement, including the press release dated May 12, 2020 included below, which describes a change in the location of the Annual Meeting from an in-person to a virtual-only meeting, should be read in conjunction with the Notice and Proxy Statement. Except as specifically revised by the information contained herein, this Supplement does not revise or update any of the other information set forth in the Notice and Proxy Statement.

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**NOTICE OF CHANGE OF LOCATION**  
**OF ANNUAL MEETING OF STOCKHOLDERS**  
**TO BE HELD ON JUNE 10, 2020**

**X4 Pharmaceuticals Announces Change to Virtual Format for 2020 Annual Meeting of Stockholders**

CAMBRIDGE, Mass. – May 12, 2020 – X4 Pharmaceuticals, Inc. (Nasdaq: XFOR) announced today that, due to public health and safety concerns related to the ongoing COVID-19 global pandemic and to support the health and well-being of its stockholders, employees and others, X4 Pharmaceuticals is changing its 2020 Annual Meeting of Stockholders (the “Annual Meeting”) to a virtual-only format that will be held via live audio webcast. The virtual Annual Meeting is expected to provide stockholders with the same rights and opportunities to participate as they would have at an in-person meeting.

The previously announced date and time of the Annual Meeting, Wednesday, June 10, 2020, at 11:00 a.m. Eastern Time, as disclosed in the previously distributed Notice of the Annual Meeting and Definitive Proxy Statement, has not changed. Online access to the Annual Meeting will begin at approximately 10:45 a.m. Eastern Time. Stockholders will not be able to attend the Annual Meeting in person.

**Attending the Virtual Meeting as a Stockholder of Record**

X4 Pharmaceuticals’ stockholders of record as of April 15, 2020 (the “Record Date”) can register to attend the Annual Meeting by accessing the meeting center at [www.proxydocs.com/XFOR](http://www.proxydocs.com/XFOR) and entering the control number on the proxy card or Notice of Internet Availability of Proxy Materials previously received. You will need to register to attend the Annual Meeting at [www.proxydocs.com/XFOR](http://www.proxydocs.com/XFOR) by no later than Monday, June 8, 2020 at 5:00 p.m. Eastern Time. You will be emailed an individual link to attend the virtual Annual Meeting. Instructions on how to connect to the Annual Meeting and participate via the Internet, including how to demonstrate proof of stock ownership, are posted at [www.proxydocs.com/XFOR](http://www.proxydocs.com/XFOR).

**Registering to Attend the Annual Meeting as a Beneficial Owner**

We have been advised by Broadridge that beneficial stockholders as of the Record Date (i.e. shares held in “street name” through an intermediary, such as a bank or broker) who want to attend the Annual Meeting

virtually must register in advance at [www.proxydocs.com/XFOR](http://www.proxydocs.com/XFOR) using the control number found on the proxy card or Notice of Internet Availability of Proxy Materials previously received by no later than Monday, June 8, 2020 at 5:00 p.m. Eastern Time.

To attend the Annual Meeting virtually, beneficial owners must obtain a legal proxy from the holder of record and submit proof of legal proxy reflecting the number of shares of X4 Pharmaceuticals common stock held as of the Record Date. Stockholders will then receive a confirmation of registration and an individual link to access the virtual Annual Meeting.

### **Asking Questions**

If you are attending the Annual Meeting as stockholder of record or beneficial owner, questions can be submitted either when you register to attend the Annual Meeting by accessing the meeting center at [www.proxydocs.com/XFOR](http://www.proxydocs.com/XFOR) and entering your control number or while you attend the Annual Meeting using the individual link you will receive after registering. Instructions on how to participate in the Annual Meeting are posted at [www.proxydocs.com/XFOR](http://www.proxydocs.com/XFOR).

### **Voting Shares**

Stockholders of record and beneficial owners who have obtained a legal proxy from the holder of record will be able to vote their shares electronically during the Annual Meeting by using their control number. Instructions on how to vote while participating in the Annual Meeting live via the Internet are posted at [www.proxydocs.com/XFOR](http://www.proxydocs.com/XFOR).

### **Whether or not stockholders plan to virtually attend the Annual Meeting, X4 Pharmaceuticals urges them to vote and submit their proxy in advance of the Annual Meeting by one of the methods described in the proxy materials for the Annual Meeting.**

The proxy materials, including the proxy card and Notice of Internet Availability of Proxy Materials, previously distributed along with the definitive proxy statement will not be updated to reflect the change in location and may continue to be used to vote shares in connection with the Annual Meeting.

### **List of Stockholders**

A list of stockholders entitled to vote at the Annual Meeting will be available for examination for any purpose germane to the Annual Meeting during normal business hours for ten days prior to the Annual Meeting at our corporate headquarters. To the extent office access is impracticable due to the recent COVID-19 pandemic, you may email us at [investors@x4pharma.com](mailto:investors@x4pharma.com) for alternative arrangements. The stockholder list will also be available during the Annual Meeting at [www.proxydocs.com/XFOR](http://www.proxydocs.com/XFOR). Instructions on how stockholders of record can view the stockholder list during the Annual Meeting are posted at [www.proxydocs.com/XFOR](http://www.proxydocs.com/XFOR).

### **About X4 Pharmaceuticals**

X4 Pharmaceuticals is a late-stage clinical biopharmaceutical company and a leader in the discovery and development of novel therapies for the treatment of diseases resulting from dysfunction of the CXCR4 pathway, with a focus on rare diseases and those with limited treatment options. The Company's lead candidate, mavorixafor, is a first-in-class, small molecule antagonist of chemokine receptor CXCR4 being developed as a once-daily oral therapy. X4 believes that inhibition of the CXCR4 receptor creates the potential for mavorixafor to provide therapeutic benefit across a wide variety of diseases, including primary immunodeficiencies and certain types of cancer. The efficacy and safety of mavorixafor, dosed once daily, is currently being evaluated in a global Phase 3 clinical trial in patients with WHIM syndrome, and in two Phase 1b clinical trials – in combination with ibrutinib in patients with Waldenström's macroglobulinemia, and as monotherapy in patients with Severe Congenital Neutropenia (SCN). X4 is continuing to leverage its insights into CXCR4 biology at its corporate headquarters in Cambridge, Massachusetts and at its research facility in Vienna, Austria, and is discovering and developing additional product candidates. For more information, please visit [www.x4pharma.com](http://www.x4pharma.com).