

---

---

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

---

**SCHEDULE 13D**

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

---

**X4 PHARMACEUTICALS, INC.**

(Name of Issuer)

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

98420X 103  
(CUSIP Number)

Paula Ragan, Ph.D.  
955 Massachusetts Avenue, 4th Floor  
Cambridge, MA 02139  
(857) 529-8300

(Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications)

March 13, 2019  
(Date of Event which Requires Filing of this Statement)

---

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of §§240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box:

---

**Note:** Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See §Rule 13d-7 for other parties to whom copies are to be sent.

---

\* 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 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).

---

---

<b>1.</b>	NAMES OF REPORTING PERSON  Paula Ragan, Ph.D.	
<b>2.</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
<b>3.</b>	SEC Use Only	
<b>4.</b>	Source of Funds (See Instructions)  OO	
<b>5.</b>	Check if Disclosure of Legal Proceedings is Required Pursuant to Items 2(d) or 2(e) <input type="checkbox"/>	
<b>6.</b>	Citizenship or Place of Organization  United States	
Number of Shares Beneficially Owned by Each Reporting Person With	<b>7.</b>	SOLE VOTING POWER  345,619 (1)
	<b>8.</b>	SHARED VOTING POWER
	<b>9.</b>	SOLE DISPOSITIVE POWER  345,619 (1)
	<b>10.</b>	SHARED DISPOSITIVE POWER  0
<b>11.</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  345,619 (1)	
<b>12.</b>	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
<b>13.</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 11  5.0% (2)	
<b>14.</b>	TYPE OF REPORTING PERSON  IN	

- (1) Consists of 181,366 shares of X4 Pharmaceuticals, Inc. (the "Issuer") common stock and options to purchase 164,253 shares of the Issuer's common stock exercisable within 60 days of March 12, 2019. These numbers reflect a 1-for-6 reverse stock split of the Issuer's common stock, effective March 13, 2019 (the "Reverse Stock Split").
- (2) Percentage of class calculated based on an aggregate of approximately 6,719,972 shares of the Issuer's common stock outstanding as of March 13, 2019, which reflects the Reverse Stock Split.

**SCHEDULE 13D****Item 1. Security and Issuer.**

This Schedule 13D relates to the common stock, par value \$0.001 per share (the “Common Stock”), of the Issuer. The Issuer’s principal executive office is located at 955 Massachusetts Avenue, 4<sup>th</sup> Floor, Cambridge, MA 02139.

**Item 2. Identity and Background.**

- (a) This Schedule 13D is being filed by Paula Ragan, Ph.D. (the “Reporting Person”).
- (b)-(c) The Reporting Person is the President, Chief Executive Officer, Secretary and a member of the Board of Directors of the Issuer (the “Board”), a clinical-stage biopharmaceutical company with a principal business address of 955 Massachusetts Avenue, 4<sup>th</sup> Floor, Cambridge, MA 02139.
- (d)-(e) During the last five years, the Reporting Person has not (i) been convicted in any criminal proceeding (excluding traffic violations or similar misdemeanors) or (ii) been a party to a civil proceeding of a judicial or administrative body of competent jurisdiction and as a result of such proceeding was or is subject to a judgment, decree or final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violation with respect to such laws.
- (f) Paula Ragan, Ph.D. is a citizen of the United States.

**Item 3. Source and Amount of Funds or Other Consideration.**

On March 13, 2019, X4 Pharmaceuticals, Inc., formerly Arsanis, Inc. (the “Issuer”), completed its business combination with X4 Therapeutics, Inc., formerly X4 Pharmaceuticals, Inc. (“X4”), in accordance with the terms of the Agreement and Plan of Merger, dated as of November 26, 2018, as amended on December 20, 2018 and March 8, 2019 (the “Merger Agreement”), by and among the Issuer, X4 and Artemis AC Corp., a Delaware corporation and wholly owned subsidiary of the Issuer (“Merger Sub”), pursuant to which, among other matters, Merger Sub merged with and into X4, with X4 continuing as a wholly owned subsidiary of the Issuer and the surviving corporation of the merger (the “Merger”). Following the Merger, on March 13, 2019, the Issuer effected a 1-for-6 reverse stock split of its common stock (the “Reverse Stock Split”) and changed its name to “X4 Pharmaceuticals, Inc.” Following the completion of the Merger, the business conducted by the Issuer became primarily the business conducted by X4, which is a clinical-stage biopharmaceutical company focused on the discovery, development and commercialization of novel therapeutics for the treatment of rare diseases. Unless noted otherwise, all references to share amounts in this Schedule 13D reflect the Reverse Stock Split.

Under the terms of the Merger Agreement, at the closing of the Merger, the Issuer issued an aggregate of approximately 25.7 million shares of its common stock to X4 stockholders, based on a common stock exchange ratio of 0.5702 shares of the Issuer’s common stock for each share of X4 common stock outstanding immediately prior to the Merger and a preferred stock exchange ratio of 0.5702 shares of the Issuer’s common stock for each share of X4 preferred stock outstanding prior to the Merger, in each case before taking into account of the Reverse Stock Split. The exchange ratios were determined through arm’s-length negotiations between the Issuer and X4.

Immediately prior to the Merger, the Reporting Person beneficially owned 1,870,000 shares of X4 common stock, 38,451 shares of X4 Series Seed preferred stock, and 1,728,381 shares of X4 common stock issuable upon the exercise of options exercisable within 60 days of March 12, 2019.

Upon consummation of the Merger, after giving effect to the exchange ratios and the Reverse Stock Split, the Reporting Person became the beneficial owner of 345,619 shares of Issuer common stock consisting of (i) 181,366 shares of Issuer common stock and (ii) 164,253 shares of Issuer common stock issuable upon the exercise of options exercisable within 60 days of March 12, 2019.

CUSIP No. 98420X 103

In connection with the Merger Agreement, the Reporting Person entered into a support agreement with the Issuer (the "Support Agreement"), pursuant to which, among other things, the Reporting Person agreed, solely in her capacity as an X4 stockholder, to vote all of her shares of X4 capital stock in favor of the adoption of the Merger Agreement and the approval of the Merger and against any other acquisition proposal. The Support Agreement places restrictions on the transfer of the shares of Issuer common stock held by the Reporting Person until the earlier of (i) the termination of the Merger Agreement pursuant to the terms thereof and (ii) the date which is 180 calendar days following the closing of the Merger.

The foregoing descriptions of the Merger Agreement, the Merger and the Support Agreement do not purport to be complete and are qualified in their entirety by reference to the full text of the Merger Agreement, including the amendments thereto, which were filed as Exhibit 2.1 to the Issuer's Current Report on Form 8-K filed with the Securities and Exchange Commission (the "SEC") on November 27, 2018, Exhibit 2.1 to the Issuer's Current Report on Form 8-K filed with the SEC on December 20, 2018, and Exhibit 2.1 to the Issuer's Current Report on Form 8-K filed with the SEC on March 8, 2019, respectively, and the Support Agreement, the form of which was filed as Exhibit A-1 to the Merger Agreement, which was filed as Exhibit 2.1 to the Issuer's Current Report on Form 8-K filed with the SEC on November 27, 2018, and all of which are incorporated by reference herein.

**Item 4. Purpose of Transaction.**

The Reporting Person acquired the Issuer's common stock and options to purchase the Issuer's common stock pursuant to the terms of the Merger Agreement. The Reporting Person, an officer and director of the Issuer, holds certain voting powers with respect to the securities owned. Consistent with the purpose of the transaction and the Reporting Person's position as the Issuer's President, Chief Executive Officer, Secretary and a member of the Board, Paula Ragan, Ph.D. has had or may in the future have discussions with fellow members of management, fellow members of the Board and others and may take actions or make suggestions and give advice to the Issuer regarding measures and changes. Such actions, discussions and advice may concern the Issuer's operations, capital structure, strategic and extraordinary transactions, management and governance and other matters that she deems relevant to her positions with the Issuer.

Other than as described in this Schedule 13D, the Reporting Person does not have any present positions, plans or proposals that relate to or would result in any of the actions described in subparagraphs (a) through (j) of Item 4 of Schedule 13D; provided, that Reporting Person may, at any time, review or reconsider her position with respect to the Issuer and reserve the right to develop such positions, plans or proposals.

**Item 5. Interest in Securities of the Issuer.**

The information below is based on a total of approximately 6,719,972 shares of Issuer common stock outstanding as of March 13, 2019, following the Merger and the Reverse Stock Split.

- (a) The Reporting Person beneficially owns 345,619 shares of Issuer common stock, consisting of (i) 181,366 shares of Issuer common stock and (ii) 164,253 shares of Issuer common stock issuable upon the exercise of options exercisable within 60 days of March 12, 2019, representing beneficial ownership of approximately 5.0% of Issuer common stock outstanding.
- (b) The Reporting Person holds sole voting and dispositive power over the 345,619 shares of Issuer common stock.
- (c) Except as described in this Schedule 13D, the Reporting Person has not effected any transactions in the Issuer common stock in the 60 days prior to the date of this Schedule 13D.
- (d) Except as described in this statement, no person has the power to direct the receipt of dividends from or the proceeds from the sale of, the shares of Issuer common stock beneficially owned by the Reporting Person.
- (e) Not applicable.

**Item 6. Contracts, Arrangements, Understandings or Relationships with Respect to Securities of the Issuer.**

The information provided and incorporated by reference in Items 3, 4 and 5 is hereby incorporated by reference.

In addition, the Reporting Person entered into an amended and restated executive employment agreement with X4 in March 2019 (the "Employment Agreement"), which provides that if Dr. Ragan's employment is terminated without cause or if Dr. Ragan resigns for good reason, each term as defined in the Employment Agreement, Dr. Ragan will become vested in the additional number of outstanding time-based equity awards granted to Dr. Ragan that would have otherwise vested had Dr. Ragan remained employed for an additional 12 months after her termination date. In addition, if Dr. Ragan's employment is terminated without cause or if Dr. Ragan resigns for good reason within the one year period following a change of control, as that term is defined in the Employment Agreement, Dr. Ragan will be entitled to automatic vesting in all outstanding time-based equity awards granted to Dr. Ragan, subject to the terms and conditions of the Employment Agreement. The foregoing description of the Employment Agreement does not purport to be complete and is qualified in its entirety by reference to the full text of the Employment Agreement, which was filed as Exhibit 10.3 to the Issuer's Current Report on Form 8-K filed with the SEC on March 13, 2019.

Other than as described in this Schedule 13D, to the best of the Reporting Person's knowledge, there are no other contracts, arrangements, understandings or relationships (legal or otherwise) among the persons named in Item 2 and between such persons and any person with respect to any securities of the Issuer.

**Item 7. Material to be Filed as Exhibits.**

Exhibit A – Agreement and Plan of Merger, dated November 26, 2018, by and among the Issuer, Artemis AC Corp. and X4 Therapeutics, Inc. (formerly X4 Pharmaceuticals, Inc.).\*

Exhibit B – First Amendment to Agreement and Plan of Merger, dated December 20, 2018, by and among the Issuer, Artemis AC Corp. and X4 Therapeutics, Inc. (formerly X4 Pharmaceuticals, Inc.).\*\*

Exhibit C – Second Amendment to Agreement and Plan of Merger, dated March 8, 2019, by and among the Issuer, Artemis AC Corp. and X4 Therapeutics, Inc. (formerly X4 Pharmaceuticals, Inc.).\*\*\*

Exhibit D – Form of Support Agreement, dated November 26, 2018, by and among the Issuer, X4 Therapeutics, Inc. (formerly X4 Pharmaceuticals, Inc.) and Paula Ragan, Ph.D.

Exhibit E – Amended and Restated Executive Employment Agreement, dated as of March 13, 2019, by and between X4 Therapeutics, Inc. (formerly X4 Pharmaceuticals, Inc.) and Paula Ragan, Ph.D.\*\*\*\*\*

---

\* Incorporated by reference to Exhibit 2.1 to the Issuer's Current Report on Form 8-K (File No. 001-38295), filed with the SEC on November 27, 2018.

\*\* Incorporated by reference to Exhibit 2.1 to the Issuer's Current Report on Form 8-K, File No. 001-38295), filed with the SEC on December 20, 2018.

\*\*\* Incorporated by reference to Exhibit 2.1 to the Issuer's Current Report on Form 8-K (File No. 001-38295), filed with the SEC on March 8, 2019.

\*\*\*\* Incorporated by reference to Exhibit A-1 to the Merger Agreement included in Exhibit 2.1 to the Issuer's Current Report on Form 8-K (File No. 001-38295), filed with the SEC on March 8, 2019.

\*\*\*\*\* Incorporated by reference to Exhibit 10.3 to the Issuer's Current Report on Form 8-K (File No. 001-38295), filed with the SEC on March 13, 2019.

**SIGNATURE**

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

Dated: March 22, 2019

By: /s/ Paula Ragan, Ph.D.

Paula Ragan, Ph.D.