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

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**SCHEDULE 13G**

**Under the Securities Exchange Act of 1934**  
**(Amendment No. 2)\***

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**Axcella Health Inc.**  
**(Name of Issuer)**

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

**05454B105**  
**(CUSIP Number)**

**March 16, 2022**  
**(Date of Event Which Requires Filing of this Statement)**

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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 in 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).

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1	NAMES OF REPORTING PERSONS HarbourVest Partners L.P.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER 0
	6	SHARED VOTING POWER 4,378,661
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 4,378,661
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 4,378,661	
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 8.46%	
12	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IA	

1	NAMES OF REPORTING PERSONS	
	HarbourVest Partners, LLC	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION	
	Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER
		0
	6	SHARED VOTING POWER
		4,378,661
	7	SOLE DISPOSITIVE POWER
		0
	8	SHARED DISPOSITIVE POWER
		4,378,661
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON	
	4,378,661	
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)	
	<input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)	
	8.46%	
12	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)	
	IA	

1	NAMES OF REPORTING PERSONS	
	SMRS-TOPE LLC	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION	
	Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER
		4,378,661
	6	SHARED VOTING POWER
		0
	7	SOLE DISPOSITIVE POWER
		4,378,661
	8	SHARED DISPOSITIVE POWER
		0
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON	
	4,378,661	
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)	
	<input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)	
	8.46%	
12	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)	
	OO	

1	NAMES OF REPORTING PERSONS	
	HVST-TOPE LLC	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION	
	Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER
		0
	6	SHARED VOTING POWER
		4,378,661
	7	SOLE DISPOSITIVE POWER
		0
	8	SHARED DISPOSITIVE POWER
		4,378,661
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON	
	4,378,661	
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)	
	<input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)	
	8.46%	
12	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)	
	OO	

**Item 1.**

**(a) Name of Issuer:**

Axcella Health Inc. (the "Issuer")

**(b) Address of Issuer's Principal Executive Offices:**

840 Memorial Drive  
Cambridge, MA 02139  
(857) 320-2200

**Item 2.**

**(a) Name of Person Filing:**

HarbourVest Partners,  
LLC HarbourVest Partners L.P.  
HVST-TOPE LLC  
SMRS-TOPE LLC

SMRS-TOPE LLC, HVST-TOPE LLC, HarbourVest Partners L.P. and HarbourVest Partners, LLC have entered into a Joint Filing Agreement, dated February 5, 2020, a copy of which is filed as Exhibit 99.1 to the Schedule 13G filed on February 5, 2020, pursuant to which such reporting persons agreed to file this statement and amendments thereto jointly in accordance with the provisions of Rule 13d-1(k)(1) under the Securities Exchange Act of 1934.

**(b) Address of Principal Business Office or, if none, Residence**

The principal business office of each reporting person is One Financial Center, Boston, MA 02111.

**(c) Citizenship:**

Reporting entities are all organized and exist under the laws of the State of Delaware.

**(d) Title of Class of Securities:**

Common stock, par value \$0.001 per share

**(e) CUSIP Number:**

05454B105

**Item 3. If this statement is filed pursuant to §§240.13d-1(b), or 240.13d-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)  A non-U.S. institution in accordance with § 240.13d-1(b)(1)(ii)(J);
- (k)  Group, in accordance with § 240.13d-1(b)(1)(ii)(K).

N/A

#### **Item 4. Ownership**

Provide the following information regarding the aggregate number and percentage of the class of securities of the issuer identified in Item 1.

##### **(a) Amount beneficially owned:**

Consists of 4,378,661 shares of common stock owned directly by SMRS-TOPE LLC. HarbourVest Partners, LLC (“HarbourVest”) is the General Partner of HarbourVest Partners L.P., which is the Manager of HVST-TOPE LLC, which is the Managing Member of SMRS-TOPE LLC. Each of HarbourVest, HarbourVest Partners L.P. and HVST-TOPE LLC may be deemed to have a beneficial interest in the shares held by SMRS-TOPE LLC.

Voting and investment power over the securities owned directly by SMRS-TOPE LLC is exercised by the Investment Committee of HarbourVest. Each of HarbourVest, HarbourVest Partners L.P. and HVST-TOPE LLC and the members of the HarbourVest Investment Committee disclaim beneficial ownership of the shares held directly by SMRS-TOPE LLC.

##### **(b) Percent of class:**

8.46% (based on 51,777,957 shares of common stock outstanding immediately following the Issuer’s registered direct offering, pursuant to a securities purchase agreement, dated March 16, 2022, as reported in the Issuer’s prospectus supplement on Form 424(b)(5) filed with the Securities and Exchange Commission on March 16, 2022).

##### **(c) Number of shares as to which the person has:**

###### **(i) Sole power to vote or to direct the vote:**

SMRS-TOPE LLC has the sole power to vote or to direct the vote 4,378,661 shares of common stock.

**(ii) Shared power to vote or to direct the vote:**

HarbourVest, HarbourVest Partners L.P. and HVST-TOPE LLC may be deemed to have shared power to vote or direct the vote of 4,378,661 shares of common stock. Each of HarbourVest, HarbourVest Partners L.P. and HVST-TOPE LLC disclaim such beneficial ownership of such shares.

**(iii) Sole power to dispose or to direct the disposition:**

SMRS-TOPE LLC has the sole power to dispose or to direct the disposition of 4,378,661 shares of common stock.

**(iv) Shared power to dispose or to direct the disposition:**

HarbourVest, HarbourVest Partners L.P. and HVST-TOPE LLC may be deemed to have shared power to dispose or direct the disposition of 4,378,661 shares of common stock. Each of HarbourVest, HarbourVest Partners L.P. and HVST-TOPE LLC disclaim such beneficial ownership of such shares.

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

If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following :

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

See item 4 above.

**Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on By the Parent Holding Company or Control Person.**

Not Applicable.

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

Not Applicable.

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

Not Applicable.

**Item 10. Certification.**

By signing below I certify that, to the best of my 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 that purpose or effect, other than activities solely in connection with a nomination under §240.14a-11.



## Signatures

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.

Date: March 29, 2022

### **HARBOURVEST PARTNERS, LLC**

By: /s/ Paula Drake

Name: Paula Drake

Title: Chief Compliance Officer

### **HARBOURVEST PARTNERS L.P.**

By: HarbourVest Partners, LLC, its General Partner

By: /s/ Paula Drake

Name: Paula Drake

Title: Chief Compliance Officer

### **HVST-TOPE LLC**

By: HarbourVest Partners L.P., its Manager

By: HarbourVest Partners, LLC, its General Partner

By: /s/ Paula Drake

Name: Paula Drake

Title: Chief Compliance Officer

### **SMRS-TOPE LLC**

By: HVST-TOPE LLC, its Managing Member

By: HarbourVest Partners L.P., its Manager

By: HarbourVest Partners, LLC, its General Partner

By: /s/ Paula Drake

Name: Paula Drake

Title: Chief Compliance Officer