

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

**SCHEDULE 13D
Under the Securities Exchange Act of 1934
(Amendment No. 01)***

SEMA4 HOLDINGS CORP.

(Name of Issuer)

CLASS A COMMON STOCK

(Title of Class of Securities)

18978W109

(CUSIP Number)

MOUNT SINAI HEALTH SYSTEM, INC. 150 East 42nd Street, Suite 2-B.17 NEW YORK, NY 10017 Phone : 212.659.8105

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

January 14, 2022

(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 §240.13d-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).

1	NAMES OF REPORTING PERSONS IR.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY) ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI 13-6171197	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP <div style="float: right;">(a) <input type="radio"/> (b) <input type="radio"/></div>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS OO	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(e) or 2(f) <div style="float: right;"><input type="radio"/></div>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION New York	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 88,355,473(1)
	8	SHARED VOTING POWER 0
	9	SOLE DISPOSITIVE POWER 88,355,473(1)
	10	SHARED DISPOSITIVE POWER 0
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 88,355,473(1)	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <div style="float: right;"><input checked="" type="checkbox"/></div>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 36.4(2)%	
14	TYPE OF REPORTING PERSON CO	

(1) The shares do not include (a) up to 11,597,198 Earn-Out Shares (as described in Item 3 of Reporting Persons' Schedule 13D filed October 13, 2021), and (b) 6,250,000 PIPE Shares (as defined below).

(2) Based on the number of shares of Class A Common Stock of Issuer (as defined below) issued and outstanding at December 31, 2021.

1	NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY) MOUNT SINAI HEALTH SYSTEM, INC. 46-4248304		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP		(a) 0 (b) 0
3	SEC USE ONLY		
4	SOURCE OF FUNDS 00		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(e) or 2(f)		0
6	CITIZENSHIP OR PLACE OF ORGANIZATION New York		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0	
	8	SHARED VOTING POWER 0	
	9	SOLE DISPOSITIVE POWER 0	
	10	SHARED DISPOSITIVE POWER 0	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 0		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES		0
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 0%		
14	TYPE OF REPORTING PERSON HC		

Item 1. Security and Issuer

This Amendment No. 1 ("Amendment No. 1") to Schedule 13D relates to the Class A common stock, par value \$0.0001 per share (the "Class A Common Stock"), of Sema4 Holdings Corp. ("Sema4" or "Issuer"), and amends and supplements such Schedule 13D, filed October 13, 2021 (the "Schedule 13D") by Icahn School of Medicine at Mount Sinai ("ISMMS") and Mount Sinai Health System, Inc. ("MSHS"). As of December 31, 2021, issued and outstanding Class A Common Stock totaled 242,578,824 shares as disclosed in the Subscription Agreement (as defined below) with ISMMS. The principal executive office of Sema4 is located at 333 Ludlow Street, North Tower, 8th Floor, Stamford, Connecticut 06902.

Item 2. Identity and Background

- (a) Item 2 of this Amendment No. 1 incorporates herein by reference the information set forth in Item 2 of the Schedule 13D.
- (b) See above.
- (c) See above.
- (d) See above.
- (e) See above.
- (f) See above.

Item 3. Source and Amount of Funds or Other Consideration

Item 3 of the Schedule 13D is hereby amended and supplemented as follows:

The information set forth in Item 4 of this Amendment No. 1 is hereby incorporated by reference into this Item 3.

Item 4. Purpose of Transaction

Item 4 is hereby amended and supplemented as follows:

As disclosed by Issuer in a Current Report on Form 8-K filed January 18, 2022 (the "Form 8-K"), Issuer and certain of its wholly-owned direct and indirect subsidiaries entered into an Agreement and Plan of Merger and Reorganization, dated January 14, 2021, with GeneDx, Inc., a wholly-owned subsidiary of OPKO Health, Inc. ("OPKO"), GeneDx Holding 2, Inc., and OPKO (the "GeneDx Merger Agreement"). Upon effectiveness of the mergers and the other transactions contemplated by the GeneDx Merger Agreement, GeneDx will become a wholly-owned indirect subsidiary of Issuer.

Concurrently with the execution of the GeneDx Merger Agreement, Issuer entered into certain related agreements with certain institutional investors, including certain of the Reporting Persons.

Issuer entered into a Subscription Agreement, dated as of January 14, 2022 (the "Subscription Agreement"), with ISMMS and other investors. Subject to the terms and conditions set forth in the Subscription Agreement, ISMMS agreed to purchase from Issuer in a private placement 6,250,000 shares of Class A Common Stock (the "PIPE Shares") at a purchase price of \$4.00 per share for the aggregate purchase price of \$25 million as part of a \$200 million private placement of Class A Common Stock. The closing of the private placement pursuant to the Subscription Agreement is contingent upon the satisfaction or waiver (if applicable) of certain conditions, as describe in the Subscription Agreement, including without limitation that the closing of the GeneDx merger shall be scheduled to occur substantially concurrently with the closing of the private placement. The Subscription Agreement is described in Item 6 hereof.

ISMMS also entered into a Stockholder Support Agreement dated as of January 14, 2022 (the "Support Agreement") with Issuer and OPKO Health, Inc, as described in Item 6 hereof.

In connection with the PIPE Investment (as described below), ISMMS entered into a lock-up agreement dated as of January 13, 2022 (the "Lock-Up Agreement") with Sema4 pursuant to which ISMMS shall not transfer, or make a public announcement of any intention to transfer, any shares of Class A Common Stock acquired in the private placement or subsequent to January 13, 2022, until one hundred eighty (180) days thereafter. The Lock-Up Agreement is described in Item 6 hereof.

The information in Item 3 of this Amendment No. 1 is incorporated by reference into this Item 4. The Reporting Persons expect to evaluate on an ongoing basis the Issuer's financial condition and prospects and their respective interests in, and intentions with respect to, the Issuer and their respective investments in the securities of Issuer, which review may be based on various factors, including Issuer's business and financial condition, results of operations and prospects, general economic and industry conditions, the securities markets in general and those for Issuer's securities in particular, as well as other developments and other investment opportunities. Accordingly, each Reporting Person reserves the right to change its intentions, as it deems appropriate. In particular, each Reporting Person may, subject to any restrictions on the Reporting Persons pursuant to the agreements entered into in connection with the GeneDx Merger Agreement, at any time and from time to time, in the open market, in privately negotiated transactions or otherwise, increase its holdings in Issuer or dispose of all or a portion of the securities of Issuer that such Reporting Person now owns or may hereafter acquire, including sales pursuant to the exercise of the registration rights provided for in the Subscription Agreements (as defined below).

Except as described in this Amendment No. 1, the Reporting Persons do not have any present 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, although, subject to the agreements described herein, the Reporting Persons, at any time and from time to time, may review, reconsider and change their position and/or change their purpose and/or

develop such plans and may seek to influence management or the board of Issuer with respect to the business and affairs of Issuer and may from time to time consider pursuing or proposing such matters with advisors, Issuer or other persons.

- (a) See above.
- (b) See above.
- (c) See above.
- (d) See above.
- (e) See above.
- (f) See above.
- (g) See above.
- (h) See above.
- (i) See above.
- (j) See above.

Item 5. Interest in Securities of the Issuer

- (a) Item 5 of the Schedule 13D is hereby amended and restated as follows:

(a) and (b) Items 7 through 11 and 13 of each of the cover pages of this Amendment No. 1 are incorporated herein by reference. Calculation of the percentage of shares of Class A Common Stock beneficially owned assumes that there were 242,578,824 shares of Class A Common Stock issued and outstanding as of December 31, 2021, as disclosed by Issuer in the Subscription Agreement with ISMMS. None of the shares of Class A Common Stock subscribed for pursuant to the Subscription Agreement are included in the beneficial ownership of the Reporting Persons on the cover pages of this Amendment No. 1 or in this Item 5. In addition, none of the Earn-Out Shares are included in the beneficial ownership of the Reporting Persons because none of the related thresholds have been satisfied.

The information set forth in Item 4 of this Amendment No. 1 is hereby incorporated by reference into this Item 5.

MSSH disclaims beneficial ownership over all Shares including Earn-Out Shares and any PIPE Shares now beneficially owned or to be acquired pursuant to certain earn-out rights and/or the Subscription Agreement (as defined below) with and by ISMMS, other than for the purpose of determining obligations under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and the filing of this Amendment No. 1 shall not be deemed an admission that MSSH is the beneficial owner of such securities for any other purpose.

- (b) See above.
- (c) Except as described in Item 4 of this Amendment No. 1, which is incorporated herein by reference, during the past 60 days, none of the Reporting Persons conducted transactions in the securities of the Issuer.

Transaction Date

Shares or Units Purchased (Sold)

Price Per Share or Unit

- (d) To the knowledge of the Reporting Persons, no one other than the Reporting Persons has the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, the securities of the Issuer reported as beneficially owned by the Reporting Persons herein.
- (e) Not applicable.

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

The information set forth in Items 2, 3, 4 and 5 is hereby incorporated by reference into this Item 6. ISMMS is a party to the following contracts, agreements and understanding with respect to securities of the Issuer:

Subscription Agreement

Concurrently with the execution of the GeneDx Merger Agreement, Sema4 and other institutional investors (collectively, the "PIPE Investors") entered into individual subscription agreements (collectively, the "Subscription Agreements"), including ISMMS and certain other existing equity holders of Sema4, (including certain stockholders that own more than 5% of the outstanding shares of Class A Common Stock and certain entities affiliated with Sema4's directors). Pursuant to, and on the terms and subject to the conditions of, the Subscription Agreements, Sema4 agreed to issue and sell to the PIPE Investors, in private placements to close substantially concurrently with the merger closing, an aggregate of 50 million shares of Class A Common Stock at \$4.00 per share, for an aggregate gross purchase price of \$200 million, before fees and expenses (the "PIPE Investment"). The Subscription Agreements provide for certain customary registration rights for the PIPE Investors. The Subscription Agreements will terminate with no further force and effect upon the earliest to occur of: (a) such date and time as the GeneDx Merger Agreement is terminated in accordance with its terms; (b) upon the mutual written agreement of the parties to such Subscription Agreement; (c) if any of the conditions to closing of the PIPE Investment set forth in Section 2 of the Subscription Agreements are not satisfied (or waived, to the extent waivable) on or prior to the earlier of the closing date of the acquisition contemplated in the GeneDx Merger Agreement or on October 14, 2022, or become

incapable of being satisfied on or prior to the earlier of the closing date or by October 14, 2022, and, as a result thereof, the transactions contemplated by the Subscription Agreements are not consummated at the closing of the PIPE Investment, and (d) October 14, 2022. Each Subscriber may, by written notice to Sema4, extend the date beyond October 14, 2022.

This summary description of the Subscription Agreements and the description in Item 4 hereof do not purport to be complete, and are subject to and qualified in their entirety by reference to the full text of the Form of Subscription Agreement, a copy of which is attached as Exhibit 10.1 to Issuer's Form 8-K, the terms of which are incorporated herein by reference.

Stockholder Support Agreement

Sema4 and OPKO entered into support agreements (the "Support Agreements") with certain stockholders of Sema4, including ISMMS and certain other stockholders that own more than 5% of the outstanding shares of Class A Common Stock and certain entities affiliated with Sema4's directors, whereby such stockholders have agreed to, among other things, (a) vote at any meeting of the stockholders of Sema4 all of their shares of Class A Common Stock held of record: (i) to approve the issuance of the stock consideration pursuant to GeneDx Merger Agreement and the issuance of Class A Common Stock pursuant to the Subscription Agreements; (ii) to approve the appointment of certain designees to the board of directors; (iii) to approve amendment of Sema4's current Third Amended and Restated Certificate of Incorporation to increase the authorized shares of Class A Common Stock; (iv) to approve any other proposal included in the proxy statement that is recommended by the board of directors as necessary to consummate the GeneDx merger and related transactions; (v) to approve any proposal that is recommended by the board of directors to adjourn the meeting to a later date, if there are not sufficient affirmative votes (in person or by proxy) to obtain the requested approvals on the date on which such meeting is held; and (vi) against any and all other proposals that could reasonably be expected to delay or impair the ability of Sema4 to consummate the GeneDx merger and related transactions; (b) provide a proxy to Sema4 to vote such shares accordingly (subject to the condition that a proxy statement has been filed with the SEC and provided to the stockholders of Sema4); (c) be bound by certain other covenants and agreements related to GeneDx merger and related transactions; and (d) be bound by certain transfer restrictions with respect to all or a percentage of their shares of Class A Common Stock, prior to the meeting, in each case, on the terms and subject to the conditions set forth in the Support Agreements.

This summary description of the Support Agreements and the description in Item 4 hereof do not purport to be complete, and are subject to and qualified in their entirety by reference to the full text of the Form of Stockholder Support Agreement, a copy of which is attached as Exhibit 10.3 to Issuer's Form 8-K, the terms of which are incorporated herein by reference.

Lockup Agreement

In connection with the PIPE Investment, ISMMS and certain other investors entered into lockup agreements (the "Lock-Up Agreements") with Sema4 pursuant to which such investors agreed not to transfer, or make a public announcement of any intention to transfer, any shares of Class A Common Stock acquired in the private placement or subsequent to January 13, 2022, until one hundred eighty (180) days thereafter.

This summary description of the Lock-Up Agreements and the description in Item 4 hereof do not purport to be complete, and are subject to and qualified in their entirety by reference to the full text of the Form of Lock-Up Agreement, a copy of which is attached as Exhibit 10.4 to Issuer's Form 8-K, the terms of which are incorporated herein by reference.

Item 7. Material to Be Filed as Exhibits

None.

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.

ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI

January 21, 2022

By: /s/ Stephen Harvey
Chief Financial Officer

MOUNT SINAI HEALTH SYSTEM, INC.

January 21, 2022

By: /s/ Stephen Harvey
Chief Financial Officer

The original statement shall be signed by each person on whose behalf the statement is filed or his authorized representative. If the statement is signed on behalf of a person by his authorized representative (other than an executive officer or general partner of the filing person), evidence of the representative's authority to sign on behalf of such person shall be filed with the statement: provided, however, that a power of attorney for this purpose which is already on file with the Commission may be incorporated by reference. The name and any title of each person who signs the statement shall be typed or printed beneath his signature.

Footnotes:

Attention: Intentional misstatements or omissions of fact constitute Federal criminal violations (See 18 U.S.C. 1001)
