

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

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**SCHEDULE 13D**  
**Under the Securities Exchange Act of 1934**  
**(Amendment No. 4)\***

**GENEDX HOLDINGS CORP. (f/k/a SEMA4 HOLDINGS CORP.)**

(Name of Issuer)

**Class A Common Stock**

(Title of Class of Securities)

**81663L101**

(CUSIP Number)

**Mount Sinai Health System, Inc.**  
**150 East 42nd Street**  
**Suite 2-B.17**  
**New York, NY 10017**  
**212.659.8105**

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

**October 31, 2024**

(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, as amended (the "Exchange Act") or otherwise subject to the liabilities of that section of the Exchange Act but shall be subject to all other provisions of the Exchange Act (however, see the Notes).

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1	NAMES OF REPORTING PERSONS ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI		
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	SOURCE OF FUNDS OO		
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="checkbox"/>		
6	CITIZENSHIP OR PLACE OF ORGANIZATION New York		
	Number of Shares Beneficially Owned By Each Reporting Person With	7	SOLE VOTING POWER 2,866,833 <sup>1</sup>
		8	SHARED VOTING POWER 0
		9	SOLE DISPOSITIVE POWER 2,866,833
		10	SHARED DISPOSITIVE POWER 0
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 2,866,833		
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input checked="" type="checkbox"/> See Items 3 and 5 below.		
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9 10.4% <sup>2</sup>		
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) CO		

<sup>1</sup> All share amounts presented in this Amendment No. 4 reflect the 33:1 reverse stock split of the Issuer's Class A Common Stock (as defined below) effective May 4, 2023.

<sup>2</sup> Based on 27,471,397 shares of Class A Common Stock outstanding as of October 22, 2024, as reported in the Issuer's Quarterly Report on Form 10-Q filed with the SEC on October 29, 2024.

1	NAMES OF REPORTING PERSONS MOUNT SINAI HEALTH SYSTEM, INC.		
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	SOURCE OF FUNDS OO		
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="checkbox"/>		
5	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 IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/>		
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9 0%		
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) HC		

**Item 1. Security and Issuer**

This Amendment No. 4 ("Amendment No. 4") to Schedule 13D relates to the Class A common stock, par value \$0.0001 per share (the "Class A Common Stock"), of GeneDX Holdings Corp. (f/k/a Sema4 Holdings Corp.) (the "Issuer"), and amends and supplements the Schedule 13D filed on October 13, 2021 (the "Initial Filing"), as amended by Amendment No. 1, filed on January 21, 2022 ("Amendment No. 1"), Amendment No. 2, filed on May 6, 2022, and Amendment No. 3, filed on February 6, 2023 (the Initial Filing, as amended, the "Schedule 13D") by Icahn School of Medicine at Mount Sinai ("ISMMS") and Mount Sinai Health System, Inc. ("MSHS"). As of October 22, 2024, the issued and outstanding Class A Common Stock of the Issuer totaled 27,471,397 shares. The principal executive office of the Issuer is located at 333 Ludlow Street, North Tower, 6th Floor, Stamford, Connecticut 06902.

**Item 2. Identity and Background**

Item 2 of this Amendment No. 4 incorporates herein by reference the information set forth in Item 2 of the Schedule 13D.

**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. 4 is hereby incorporated by reference into this Item 3.

**Item 4. Purpose of Transaction**

Item 4 is hereby amended and supplemented as follows:

On October 31, 2024, ISMMS sold 865,800 shares of Class A Common Stock at a price of \$75.00 per share, in reliance on Rule 144 promulgated under the Securities Act of 1933. On October 31, 2024, ISMMS filed a Form 144, disclosing ISMMS's intention to sell up to 1,012,941 shares of Class A Common Stock within the next 90 days, which amount includes the 865,800 shares sold as described above.

The information in Item 3 of the Schedule 13D 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 the Issuer, which review may be based on various factors, including the Issuer's business and financial condition, results of operations and prospects, general economic and industry conditions, the securities markets in general and those for the 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, subject to the transactions and intentions described above, each Reporting Person may, at any time and from time to time, in the open market, in privately negotiated transactions or otherwise, increase its holdings in the Issuer or dispose of all or a portion of the securities of the 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 or in the Registration Rights Agreement described in the Schedule 13D, including after the expiration of the lockup as described in Item 6 below.

Except as described in the Schedule 13D, 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 the Issuer with respect to the business and affairs of the Issuer and may from time to time consider pursuing or proposing such matters with advisors, the Issuer or other persons.

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

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. 4 are incorporated herein by reference. Calculation of the percentage of shares of Class A Common Stock beneficially owned assumes that there were 27,471,397 shares of Class A Common Stock issued and outstanding. As of October 31, 2024, after the disposition as described above, ISMMS directly owns 2,866,833 shares of Class A Common Stock.
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The information set forth in Item 4 of this Amendment No. 4 is hereby incorporated by reference into this Item 5.

MSSH disclaims beneficial ownership over all shares beneficially owned by ISMMS, other than for the purpose of determining obligations under the Securities Exchange Act of 1934, as amended, and the filing of this Amendment No. 4 shall not be deemed an admission that MSSH is the beneficial owner of such securities for any other purpose.

- (c) Except as described in Item 4 of this Amendment No. 4, which is incorporated herein by reference, during the past 60 days, none of the Reporting Persons conducted transactions in the Class A Common Stock.
- (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**

Item 6 of the Schedule 13D is hereby amended and restated as follows:

ISMMS and the broker dealer executing the sale have reached an understanding that if the broker dealer realizes a net profit from its resale of the 865,800 shares, then it will retain the first 0.50% of such net profit. If the broker dealer realizes any excess net profit, it will remit 50% of such excess net profit to ISMMS. ISMMS has also reached an understanding with the broker dealer that it will not offer, sell, transfer or dispose of any shares of Class A Common Stock in addition to the 865,800 shares described above until November 30, 2024, without the consent of the broker dealer.

The information set forth in Items 2, 3, 4 and 5 is hereby incorporated by reference into this Item 6. The Subscription Agreements described in Amendment No. 1 provide for certain customary registration rights for the PIPE investors. The Registration Rights Agreement described in the Initial Filing provides for certain customary registration rights for certain shareholders of the Issuer.

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

Item 7 of this Amendment No. 4 incorporates herein by reference the information set forth in Item 7 of the Schedule 13D.

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**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: November 4, 2024

**ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI**

By: /s/ Vincent Tammaro

Name: Vincent Tammaro

Title: Chief Financial Officer

Icahn School of Medicine at Mount Sinai

Dated: November 4, 2024

**MOUNT SINAI HEALTH SYSTEM, INC.**

By: /s/ Vincent Tammaro

Name: Vincent Tammaro

Title: Chief Financial Officer

Mount Sinai Health System, Inc.