As filed with the Securities and Exchange Commission on February 23, 2024

Registration No. 333-

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

FORM S-8
REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

GENEDX HOLDINGS CORP.
(Exact Name of Registrant as Specified in Its Charter)

Delaware	**85-1966622**
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification No.)

333 Ludlow Street, North Tower, 6th Floor
Stamford, Connecticut 06902
(Address of Principal Executive Offices) (Zip Code)

GENEDX HOLDINGS CORP. AMENDED AND RESTATED 2021 EQUITY INCENTIVE PLAN
GENEDX HOLDINGS CORP. 2021 EMPLOYEE STOCK PURCHASE PLAN
(Full Title of the Plans)

Katherine Stueland
Chief Executive Officer
333 Ludlow Street, North Tower, 6th Floor
Stamford, Connecticut 06902
(Name and Address of Agent For Service)
(888) 729-1206
(Telephone Number, including area code, of agent for service)

Copies to:

Ethan Skerry **Per B. Chilstrom** **Fenwick & West LLP** **902 Broadway** **New York, New York 10010** **(212) 430-2600**	**Kevin Feeley** **Chief Financial Officer** **GeneDx Holdings Corp.** **333 Ludlow Street, North Tower, 6th Floor** **Stamford, Connecticut 06902** **(888) 729-1206**

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of “large accelerated filer,” “accelerated filer,” “smaller reporting company,” and “emerging growth company” in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☐	Accelerated filer ☒
Non-accelerated filer ☐	Smaller reporting company ☒
	Emerging growth company ☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. ☐

REGISTRATION OF ADDITIONAL SHARES PURSUANT TO GENERAL INSTRUCTION E

Pursuant to General Instruction E of Form S-8, GeneDx Holdings Corp., a Delaware corporation (the "Registrant"), is filing this registration statement on Form S-8 (this "Registration Statement") with the Securities and Exchange Commission (the "Commission") to register (a) 1,298,943 additional shares of Class A common stock ("Class A Common Stock") available for issuance under the GeneDx Holdings Corp. Amended and Restated 2021 Equity Incentive Plan (the "2021 EIP"), pursuant to the evergreen provisions of the 2021 EIP providing for an annual 5% automatic increase in the number of shares reserved for issuance under the 2021 EIP, and (b) 259,788 additional shares of Class A Common Stock available for issuance under the GeneDx Holdings Corp. 2021 Employee Stock Purchase Plan (the "2021 ESPP"), pursuant to the evergreen provisions of the 2021 ESPP providing for an annual 1% automatic increase in the number of shares reserved for issuance under the 2021 ESPP.

In accordance with General Instruction E of Form S-8, this Registration Statement hereby incorporates by reference the contents of the Registrant's prior registration statements on Form S-8 filed with the Commission on September 27, 2021 (Registration No. 333-259815) (the "First Prior Registration Statement"), January 25, 2022 (Registration No. 333-262338) (including the reoffer prospectus contained therein (which reoffer prospectus superseded and replaced the reoffer prospectus contained in the First Prior Registration Statement), the "Second Prior Registration Statement"), January 9, 2023 (Registration No. 333-269165) (the "Third Prior Registration Statement") and April 25, 2023 (Registration No. 333-271432) (the "Fourth Prior Registration Statement"), except to the extent supplemented, amended or superseded by the information set forth herein.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

The following documents filed by GeneDx Holdings Corp. (the "Registrant") with the Securities and Exchange Commission (the "Commission") pursuant to the Securities Act of 1933, as amended (the "Securities Act"), and the Securities Exchange Act of 1934, as amended (the "Exchange Act"), are incorporated herein by reference:

(a) the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2023, filed with the Commission on February 23, 2024; and

(b) the description of the Registrant's Class A Common Stock contained in the Registrant's Registration Statement on Form 8-A filed with the Commission on August 31, 2020, as updated by the description of the Registrant's Class A Common Stock contained in Exhibit 4.4 to the Annual Report on Form 10-K for the year ended December 31, 2022, filed with the Commission on March 16, 2023, including any subsequent amendments or reports filed for the purpose of updating such description.

All documents subsequently filed by the Registrant with the Commission pursuant to Sections 13(a), 13(c), 14, or 15(d) of the Exchange Act, prior to the filing of a post-effective amendment to the Registration Statement which indicates that all securities offered hereby have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference into this Registration Statement and to be a part hereof from the date of the filing of such documents, except that information furnished to the Commission under Item 2.02 or Item 7.01 in Current Reports on Form 8-K and any exhibit relating to such information, shall not be deemed to be incorporated by reference in this Registration Statement.

Any statement contained herein or in a document incorporated or deemed to be incorporated by reference in this Registration Statement shall be deemed to be modified or superseded for purposes of this Registration Statement to the extent that a statement contained in this Registration Statement, or in any other subsequently filed document which also is or is deemed to be incorporated by reference in this Registration Statement, modifies or supersedes such earlier statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Registration Statement.

Item 8. Exhibits.

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
4.1	Third Amended and Restated Certificate of Incorporation of the Registrant	8-K	001-39482	3.1	July 28, 2021	
4.2	First Certificate of Amendment to the Third Amended and Restated Certificate of Incorporation of the Registrant	8-K	001-39482	3.1	May 2, 2022	
4.3	Second Certificate of Amendment to the Third Amended and Restated Certificate of Incorporation of the Registrant	8-K	001-39482	3.1	January 9, 2023	
4.4	Third Certificate of Amendment to the Third Amended and Restated Certificate of Incorporation of the Registrant	8-K	001-39482	3.1	April 28, 2023	
4.5	Amended and Restated Bylaws of the Registrant as currently in effect	8-K	001-39482	3.2	January 9, 2023	
5.1	Opinion of Fenwick & West LLP					X
23.1	Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm for GeneDx Holdings Corp.					X
23.2	Consent of Fenwick & West LLP (contained in Exhibit 5.1)					X
24.1	Power of Attorney (included on the signature page of this Registration Statement)					X
99.1	GeneDx Holdings Corp. Amended and Restated 2021 Equity Incentive Plan	8-K	001-39482	10.1	April 17, 2023	
99.2	Form of Stock Option Agreement under the GeneDx Holdings Corp. Amended and Restated 2021 Equity Incentive Plan	8-K	001-39482	10.6	July 28, 2021	
99.3	Form of RSU Agreement under the GeneDx Holdings Corp. Amended and Restated 2021 Equity Incentive Plan	8-K	001-39482	10.7	July 28, 2021	
99.4	GeneDx Holdings Corp. 2021 Employee Stock Purchase Plan	8-K	001-39482	10.9	July 28, 2021	
107	Filing Fee Table					X

SIGNATURES

Pursuant to the requirements of the Securities Act, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Stamford, State of Connecticut, on the twenty-third day of February, 2024.

GeneDx Holdings Corp.

By:	*/s/* Katherine Stueland
	Katherine Stueland Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Katherine Stueland, Kevin Feeley and Devin Schaffer, and each or any one of them, as his or her true and lawful attorneys-in-fact, proxies and agents, each with full power of substitution and resubstitution and full power to act without the other, for him or her in any and all capacities, to sign any and all amendments to this registration statement (including post-effective amendments or any abbreviated registration statement and any amendments thereto filed pursuant to Rule 462(b) increasing the number of securities for which registration is sought), and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact, proxies and agents full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully for all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact, proxies and agents, or their or his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act, this Registration Statement has been signed by the following persons on behalf of the Registrant in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Katherine Stueland Katherine Stueland	Chief Executive Officer and Director (Principal Executive Officer)	February 23, 2024
/s/ Kevin Feeley Kevin Feeley	Chief Financial Officer (Principal Financial Officer)	February 23, 2024
/s/ Jason Ryan Jason Ryan	Chairman of the Board	February 23, 2024
/s/ Eli D. Casdin Eli D. Casdin	Director	February 23, 2024
/s/ Emily Leproust Emily Leproust	Director	February 23, 2024
/s/ Keith Meister Keith Meister	Director	February 23, 2024
/s/ Joshua Ruch Joshua Ruch	Director	February 23, 2024
/s/ Richard Pfenninger, Jr. Richard Pfenninger, Jr.	Director	February 23, 2024

Exhibit 107

Calculation of Filing Fee Table

Form S-8
(Form Type)

GeneDx Holdings Corp.
(Exact name of Registrant as Specified in its Charter)

Table 1 - Newly Registered Securities

Security Type	Security Class Title	Fee Calculation Rule	Amount Registered[(1)]	Proposed Maximum Offering Price Per Share	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee
Equity	Class A common stock, $0.0001 par value per share	Rule 457(c) and Rule 457(h)	1,298,943 [(2)]	$5.2550[(3)]	$6,825,945.47	$0.00014760	$1,007.51
Equity	Class A common stock, $0.0001 par value per share	Rule 457(c) and Rule 457(h)	259,788[(4)]	$4.4668[(5)]	$1,160,421.04	$0.00014760	$171.28
Total Offering Amounts					$7,986,366.51		$1,178.79
Total Fee Offsets							—
Net Fee Due							$1,178.79

(1) Pursuant to Rule 416(a) under the Securities Act of 1933, as amended (the “Securities Act”), this Registration Statement shall also cover any additional shares of the Class A common stock of GeneDx Holdings Corp. (the “Registrant”) that become issuable in respect of the securities identified in the above table by reason of any stock dividend, stock split, recapitalization or other similar transaction effected without the Registrant’s receipt of consideration that increases the number of the Registrant’s outstanding shares of Class A common stock.

(2) Represents additional shares of the Registrant’s Class A common stock to be registered and available for grant under its Amended and Restated 2021 Equity Incentive Plan (the “2021 EIP”) resulting from the automatic 5% annual increase in the number of authorized shares reserved and available for issuance under the 2021 EIP.

(3) Estimated in accordance with Rules 457(c) and 457(h) of the Securities Act solely for the purpose of calculating the registration fee. The proposed maximum offering price per share of $5.2550 was computed by averaging the high and low prices of a share of the Registrant’s Class A common stock as reported on the Nasdaq Global Select Market on February 20, 2024.

(4) Represents additional shares of the Registrant’s Class A common stock to be registered and available for grant under its 2021 Employee Stock Purchase Plan (the “2021 ESPP”) resulting from the automatic 1% annual increase in the number of authorized shares reserved and available for issuance under the 2021 ESPP.

(5) Estimated in accordance with Rules 457(c) and 457(h) of the Securities Act solely for the purpose of calculating the registration fee. The proposed maximum offering price per share of $4.4668 was computed by averaging the high and low prices of a share of the Registrant’s Class A common stock as reported on the Nasdaq Global Select Market on February 20, 2024, multiplied by 85% pursuant to the purchase price terms of the 2021 ESPP.

FENWICK

902 Broadway
Suite 14
New York, NY 10010-6035

212.430.2600
Fenwick.com

Exhibit 5.1

February 23, 2024

GeneDx Holdings Corp.
333 Ludlow Street, North Tower, 6th Floor
Stamford, Connecticut 06902

Ladies and Gentlemen:

At your request, as your counsel, we have examined the Registration Statement on Form S-8 (the "***Registration Statement***") to be filed by GeneDx Holdings Corp., a Delaware corporation (the "***Company***"), with the Securities and Exchange Commission (the "***Commission***") on or about February 23, 2024 in connection with the registration under the Securities Act of 1933, as amended (the "***Securities Act***"), of an aggregate of 1,558,731 shares (the "***Shares***") of the Company's Class A common stock, par value $0.0001 per share (the "***Common Stock***"), subject to issuance by the Company (a) upon exercise or settlement of awards to be granted under the Company's Amended and Restated 2021 Equity Incentive Plan (the "***2021 Plan***") pursuant to the provision of the 2021 Plan providing for an automatic annual increase in the number of shares reserved and available for issuance under the 2021 Plan and (b) upon exercise of purchase rights to acquire shares of Common Stock to be granted under the Company's 2021 Employee Stock Purchase Plan (the "***Purchase Plan***" and, together with the 2021 Plan, the "***Plans***") pursuant to the provision of the Purchase Plan providing for an automatic annual increase in the number of shares reserved and available for issuance under the Purchase Plan.

At your request we are providing this letter to express our opinion on the matters set forth below in this letter ("***our opinion***").

In connection with our opinion, we have examined such matters of fact as we have deemed necessary, which included examination of originals or copies of: (a) the Company's Third Amended and Restated Certificate of Incorporation, as amended (the "***Certificate of Incorporation***"), the Company's Amended and Restated Bylaws (the "***Bylaws***" and, together with the Certificate of Incorporation, the "***Charter Documents***"), the Plans and related form agreements for use thereunder, and the Registration Statement and the exhibits thereto, (b) certain corporate proceedings of the Company's board of directors and the Company's stockholders relating to adoption or approval of the Charter Documents and the Plans, and (c) such other documents as we have deemed advisable, and we have examined such questions of law as we have considered necessary.

In our examination of documents for purposes of this opinion, we have assumed, and express no opinion as to, the authenticity and completeness of all documents submitted to us as originals, the genuineness of signatures on documents reviewed by us, the conformity to originals and the completeness of all documents submitted to us as copies, the legal capacity of all parties executing any documents (other than the Company), the lack of any undisclosed termination or modification or waiver of any document, the absence of any extrinsic agreements or documents that might change or affect the interpretation or terms of documents, and the due authorization, execution and delivery of all documents by each party thereto other than the Company. We have also assumed that any certificates or instruments representing the Shares, when issued, will be executed by the Company and by officers of the Company duly authorized to do so. In rendering our opinion, we have also relied upon a certificate of good standing issued by the Delaware Secretary of State with respect to the Company and representations and certifications made to us by the Company, including without limitation representations in a Management Certificate addressed to us of even date herewith that the Company has available a sufficient number of authorized shares of Common Stock that are not currently outstanding or reserved for issuance under other outstanding securities or plans of the Company, to enable the Company to issue and deliver all of the Shares as of the date of this letter.

We render this opinion only with respect to, and we express no opinion herein concerning the application or effect of the laws of any jurisdiction other than, the existing Delaware General Corporation Law now in effect.

Based upon, and subject to, the foregoing, it is our opinion that the Shares have been duly authorized and, when the Shares that may be issued and sold (a) upon the exercise or settlement of awards to be granted under the 2021 Plan and (b) pursuant to purchase rights to acquire shares of Common Stock to be granted under the Purchase Plan, have been issued and sold by the Company against the Company's receipt of payment therefor (in an amount and type of consideration not less than the par value per Share) in accordance with the terms (including, without limitation, payment and authorization provisions) of the applicable Plan, and have been duly registered on the books of the transfer agent and registrar for the Shares in the name or on behalf of the holders thereof, such Shares will be validly issued, fully paid and non-assessable.

We consent to the use of this opinion as an exhibit to the Registration Statement and further consent to all references to us, if any, in the Registration Statement and any amendments or supplements thereto. We do not thereby admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission thereunder. This opinion is intended solely for use in connection with the issuance, sale and resale of the Shares subject to the Registration Statement, and is not to be relied upon for any other purpose. In providing this letter, we are opining only as to the specific legal issues expressly set forth above, and no opinion shall be inferred as to any other matter or matters. This opinion is rendered on, and speaks only as of, the date of this letter first written above, and does not address any potential change in facts or law that may occur after the date of this opinion letter. We assume no obligation to advise you of any fact, circumstance, event or change in the law or the facts that may hereafter be brought to our attention, whether or not such occurrence would affect or modify any of the opinions expressed herein.

Very truly yours,

/s/ Fenwick & West LLP

FENWICK & WEST LLP

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement (Form S-8) pertaining to the GeneDx Holdings Corp. Amended and Restated 2021 Equity Incentive Plan and GeneDx Holdings Corp. 2021 Employee Stock Purchase Plan of our report dated February 23, 2024, with respect to the consolidated financial statements of GeneDx Holding Corp. included in its Annual Report (Form 10-K) for the year ended December 31, 2023, filed with the Securities and Exchange Commission.

/s/ ERNST & YOUNG LLP

New York, New York

February 23, 2024