UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM S-8 REGISTRATION STATEMENT

Under The Securities Act of 1933

Histogenics Corporation

(Exact name of Registrant as specified in its charter)

Delaware (State or Other Jurisdiction of Incorporation or Organization) 04-3522315 (IRS Employer Identification No.)

830 Winter Street, 3rd Floor Waltham, Massachusetts 02451 (781) 547-7900

(Address, including zip code, and telephone number, including area code, of Registrant's principal executive offices)

2013 Equity Incentive Plan 2013 Employee Stock Purchase Plan (Full title of plans)

Jonathan Lieber Chief Financial Officer 830 Winter Street, 3rd Floor Waltham, Massachusetts 02451 (Name and address of agent for service)

(781) 547-7900 (Telephone number, including area code, of agent for service)

Please send copies of all communications to:

Marc F. Dupré, Esq.
Albert W. Vanderlaan, Esq.
Gunderson Dettmer Stough
Villeneuve Franklin & Hachigian, LLP
One Marina Park Drive, Suite 900
Boston, Massachusetts 02210
Telephone: (617) 648-9100

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

 Large accelerated filer
 □
 Accelerated filer
 □

 Non-accelerated filer
 □ (Do not check if a smaller reporting company)
 Smaller reporting company
 ⋈

CALCULATION OF REGISTRATION FEE

| Title of Securities to be Registered | Amount to be Registered(1) | Proposed Maximum Offering Price Per Share(2) | Proposed Maximum Aggregate Offering Price(2) | Amount of Registration Fee |
|--|----------------------------------|---|---|-------------------------------|
| Common Stock, \$0.01 par value per share | | | | - |

| —2013 Equity Incentive Plan | 181,414 | \$2.66 | \$482,561.24 | \$48.59 | |
|------------------------------------|---------|--------|--------------|---------|--|
| —2013 Employee Stock Purchase Plan | 51,832 | \$2.66 | \$137,873.12 | \$13.88 | |
| TOTAL | 233,246 | | \$620,434.36 | \$62.48 | |

- (1) Pursuant to Rule 416(a) promulgated under the Securities Act of 1933, as amended (the "Securities Act"), this Registration Statement shall also cover any additional shares of Registrant's Common Stock that become issuable under the plans set forth herein by reason of any stock dividend, stock split, recapitalization, or other similar transaction effected that results in an increase to the number of outstanding shares of Registrant's Common Stock, as applicable.
- (2) Estimated solely for the purpose of calculating the amount of the registration fee pursuant to Rule 457(c) and (h)(1) under the Securities Act. The offering price per share and aggregate offering price for the unissued stock options and shares of Common Stock are based upon the average of the high and low prices of the Registrant's common stock as reported on The NASDAQ Stock Exchange Global Market on March 7, 2016.

EXPLANATORY NOTE

Information Required in the Section 10(a) Prospectus

Pursuant to General Instruction E to Form S-8 under the Securities Act, this Registration Statement is filed by Histogenics Corporation (the "Company") for the purpose of registering additional shares of Common Stock under the Company's 2013 Equity Incentive Plan and the Company'(the "EIP") and the Company's 2013 Employee Stock Purchase Plan (the "ESPP").

The number of shares of Common Stock available for issuance under the EIP is subject to an automatic annual increase on the first day of the Company's calendar year beginning in 2015 equal to the lowest of (a) 3.5% of the total number of shares of Common Stock then outstanding, (b) 181,414 shares of Common Stock or (c) the number determined by the Company's Board of Directors (the "EIP Evergreen Provision"). Accordingly, the number of shares of Common Stock available for issuance under the EIP was increased by 181,414 shares effective January 1, 2016. This Registration Statement registers the 181,414 additional shares of Common Stock available for issuance under the EIP as a result of the EIP Evergreen Provision.

The number of shares of Common Stock available for issuance under the ESPP is subject to an automatic annual increase on the first day of the Company's calendar year beginning in 2015 equal to the lowest of (a) 1.0% of the total number of shares of Common Stock then outstanding, (b) 51,832 shares of Common Stock or (c) the number determined by the Company's Board of Directors (the "ESPP Evergreen Provision"). Accordingly, the number of shares of Common Stock available for issuance under the ESPP was increased by 51,832 shares effective January 1, 2016. This Registration Statement registers the 51,832 additional shares of Common Stock available for issuance under the EIP as a result of the EIP Evergreen Provision.

Of the 896,957 shares currently authorized by the EIP, 715,543 have already been registered pursuant to the currently effective Registration Statement on Form S-8 (Registration No. 333-201552) filed on January 16, 2015 (the "Original Registration Statement"). Of the 207,329 shares currently authorized by the ESPP, 155,497 have already been registered pursuant to the Original Registration Statement. The contents of the Original Registration Statement, including any amendments thereto or filings incorporated therein, are incorporated herein by this reference. Any items in the Original Registration Statement not expressly changed hereby shall be as set forth in the Original Registration Statement.

PART II

Information Required in the Registration Statement

Item 8. <u>Exhibits</u>.

| Exhibit | | | Incorporated by Reference | | | |
|---------------|--|------|---------------------------|---------|-------------|-----------------|
| <u>Number</u> | Exhibit Description | Form | File No. | Exhibit | Filing Date | <u>Herewith</u> |
| 5.1 | Opinion and Consent of Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP. | | | | | X |
| 23.1 | Consent of Grant Thornton LLP, Independent Registered Public Accounting Firm. | | | | | X |
| 23.2 | Consent of Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP (contained in Exhibit 5.1). | | | | | X |
| 24.1 | Power of Attorney (incorporated by reference to the signature page of this Registration Statement). | | | | | X |

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, 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 Waltham, Commonwealth of Massachusetts, on this 10th day of March, 2016.

HISTOGENICS CORPORATION

/s/ Jonathan Lieber
Jonathan Lieber
Chief Financial Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that the undersigned officers and directors of Histogenics Corporation, a Delaware corporation, do hereby constitute and appoint Adam Gridley and Jonathan Lieber, and each of them, the lawful attorneys-in-fact and agents with full power and authority to do any and all acts and things and to execute any and all instruments which said attorneys and agents, and any one of them, determine may be necessary or advisable or required to enable said corporation to comply with the Securities Act of 1933, as amended, and any rules or regulations or requirements of the Securities and Exchange Commission in connection with this Registration Statement. Without limiting the generality of the foregoing power and authority, the powers granted include the power and authority to sign the names of the undersigned officers and directors in the capacities indicated below to this Registration Statement, to any and all amendments, both pre-effective and post-effective, and supplements to this Registration Statement, and to any and all instruments or documents filed as part of or in conjunction with this Registration Statement or amendments or supplements thereof, and each of the undersigned hereby ratifies and confirms that all said attorneys and agents, or any one of them, shall do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement has been signed by the following persons on behalf of the Registrant in the capacities and on the dates indicated.

| <u>Signature</u> | <u>Title</u> | <u>Date</u> | |
|--|---|----------------|--|
| /s/ Adam Gridley Adam Gridley | Chief Executive Officer, President and Director (Principal Executive Officer) | March 10, 2016 | |
| /s/ Jonathan Lieber Jonathan Lieber | Chief Financial Officer (Principal Financial and Accounting Officer) | March 10, 2016 | |
| /s/ Garheng Kong, M.D., Ph.D. Garheng Kong, M.D., Ph.D. | Chairman of the Board | March 10, 2016 | |
| /s/ Joshua Baltzell Joshua Baltzell | Director | March 10, 2016 | |
| /s/ David Gill David Gill | Director | March 10, 2016 | |
| /s/ John H. Johnson John H. Johnson | Director | March 10, 2016 | |
| /s/ Michael Lewis Michael Lewis | Director | March 10, 2016 | |
| /s/ Kevin Rakin Kevin Rakin | Director | March 10, 2016 | |

EXHIBIT INDEX

| Exhibit | | | Filed | | | |
|---------|--|------|----------|---------|-------------|------------------|
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March 10, 2016

Histogenics Corporation 830 Winter Street, 3rd Floor Waltham, MA 02451

Ladies and Gentlemen:

We refer to the registration statement on Form S-8 (the "Registration Statement") to be filed by Histogenics Corporation, a Delaware corporation (the "Company"), with the Securities and Exchange Commission (the "Commission") in connection with the registration under the Securities Act of 1933, as amended (the "Act"), of an aggregate of up to 181,414 shares of the Company's common stock, \$0.01 par value ("Common Stock") reserved for issuance under the Company's 2013 Employee Stock Purchase Plan, and an aggregate of up to 51,832 shares of Common Stock reserved for issuance under the Company's 2013 Equity Incentive Plan (together, the "Plans").

In connection with this opinion, we have reviewed the actions proposed to be taken by you in connection with the issuance and sale of the Stock to be issued under the Plans. We have also examined and relied upon the Registration Statement and the originals or copies certified to our satisfaction of such other documents, records, certificates, memoranda and other instruments as in our judgment are necessary or appropriate to enable us to render the opinion expressed below. With your consent, we have relied upon certificates and other assurances of officers of the Company as to factual matters without having independently verified such factual matters. We have assumed the genuineness and authenticity of all documents submitted to us as originals, and the conformity to originals of all documents submitted to us as copies thereof and the due execution and delivery of all documents where due execution and delivery are a prerequisite to the effectiveness thereof.

This opinion is being furnished in connection with the requirements of Item 601(b)(5) of Regulation S-K under the Act, and no opinion is expressed herein as to any matter pertaining to the contents of the Registration Statement, other than as expressly stated herein with respect to the issue of the Stock. Our opinion is limited to the matters stated herein and no opinion is implied or may be inferred beyond the matters expressly stated. Our opinion herein is expressed solely with respect to the federal laws of the United States and the General Corporation Law of the State of Delaware. Our opinion is based on these laws as in effect on the date hereof, and we disclaim any obligation to advise you of facts, circumstances, events or developments which hereafter may be brought to our attention and which may alter, affect or modify the opinion expressed herein. We are not rendering any opinion as to compliance with any federal or state antifraud law, rule or regulation relating to securities, or to the sale or issuance thereof.

Based upon and subject to the foregoing, we advise you that, in our opinion, when the Stock has been issued and sold by the Company pursuant to the applicable provisions of the Plans and pursuant to the agreements which accompany the Plans, and in accordance with the Registration Statement, such Stock will be validly issued, fully paid and nonassessable.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement. In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Commission thereunder.

Very truly yours,

/s/ Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We have issued our report dated March 10, 2016, with respect to the consolidated financial statements of Histogenics Corporation included in the Annual Report on Form 10-K for the year ended December 31, 2015, which is incorporated by reference in this Registration Statement. We consent to the incorporation by reference of the aforementioned report in this Registration Statement.

/s/ GRANT THORNTON LLP

Boston, Massachusetts March 10, 2016