

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

SCHEDULE 13G

UNDER THE SECURITIES EXCHANGE ACT OF 1934

CYTORI THERAPEUTICS, INC.

(Name of Issuer)

COMMON STOCK

(Title of Class of Securities)

23283K105

(CUSIP Number)

DECEMBER 31, 2008

(Date of Event Which Requires Filing of this Statement)

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).

PERSONS WHO ARE TO RESPOND TO THE COLLECTION OF INFORMATION CONTAINED IN THIS FORM ARE NOT REQUIRED TO RESPOND UNLESS THE FORM DISPLAYS A CURRENTLY VALID OMB CONTROL NUMBER.

1. NAMES OF REPORTING PERSONS  
I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)

GAGNON SECURITIES LLC

2. CHECK THE APPROPRIATE BOX IF A GROUP\* (a)  
(b)

3. SEC USE ONLY

4. CITIZENSHIP OR PLACE OF ORGANIZATION

DELAWARE LIMITED LIABILITY COMPANY

NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	5. SOLE VOTING POWER	0
	6. SHARED VOTING POWER	1,881,164
	7. SOLE DISPOSITIVE POWER	0
	8. SHARED DISPOSTIVE POWER	1,881,164

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,881,164

10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)

11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 6.4%

12. TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IA

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13. NAMES OF REPORTING PERSONS  
I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)  
  
NEIL GAGNON  
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14. CHECK THE APPROPRIATE BOX IF A GROUP\* (a)  
(b)  |X|  
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15. SEC USE ONLY  
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16. CITIZENSHIP OR PLACE OF ORGANIZATION  
  
USA  
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NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	17. SOLE VOTING POWER	1,542,925
	18. SHARED VOTING POWER	1,431,091
	19. SOLE DISPOSITIVE POWER	1,542,925
	20. SHARED DISPOSTIVE POWER	1,530,724

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21. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 3,073,649  
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22. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)  
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23. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 10.4%  
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24. TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IN  
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ITEM 1. (a) Name of Issuer:  
Cytori Therapeutics, Inc.

(b) Address of Issuer's Principal Executive Offices:  
3020 Callan Road  
San Diego, CA 92121

Item 2. (a) Name of Person Filing:

This Schedule 13G is being filed by Gagnon Securities LLC and Neil Gagnon (together, the "Reporting Persons"). Gagnon Securities LLC is an investment adviser registered under Section 203 of the Investment Advisers Act of 1940 and furnishes investment advice to several customer accounts, foundations, partnerships, trusts, and private investment funds (collectively, the "Funds"). Mr. Gagnon is the managing member and the principal owner of Gagnon Securities LLC. In its role as investment manager to the Funds, Gagnon Securities LLC shares investment and/or voting power with Mr. Gagnon over certain securities of the Issuer described in this schedule that are owned by the Funds and shares investment discretion and/or voting power over certain securities of the Issuer with person other than Mr. Gagnon, and may be deemed to be the beneficial owner of the shares of the Issuer held by the Funds. Additionally, Mr. Gagnon beneficially owns certain securities over which he has sole voting power and sole dispositive power, and certain securities over which shares dispositive power with certain persons but has no voting power. The Reporting Persons expressly disclaim beneficial ownership of all securities held in the Funds' accounts. No single client's interest as reported in the customer accounts at Gagnon Securities LLC exceeds 5% of the outstanding Common Stock of the Issuer. In addition, the filing of this Schedule 13G shall not be construed as an admission that the Reporting Persons or any of their affiliates is the beneficial owner of any securities covered by this Schedule 13G for any other purposes than Section 13(d) of the Securities Exchange Act of 1934.

(b) Address of Principal Business Office or, if none, Residence:  
1370 Ave. of the Americas, Suite 2400  
New York, NY 10019

(c) Citizenship:  
GAGNON SECURITIES LLC: Delaware Limited Liability Company  
NEIL GAGNON: USA

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

(e) CUSIP Number: 23283K105

Item 3. If this statement is filed pursuant to ss.ss.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 ss.240.13d-1(b)(1)(ii)(E);
- (f)  An employee benefit plan or endowment fund in accordance with ss.240.13d-1(b)(1)(ii)(F);
- (g)  A parent holding company or control person in accordance with ss. 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)  Group, in accordance with ss.240.13d-1(b)(1)(ii)(J).

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:
  - GAGNON SECURITIES LLC: 1,881,164
  - NEIL GAGNON: 3,073,649
  
- (b) Percent of class:
  - GAGNON SECURITIES LLC: 6.42%
  - NEIL GAGNON: 10.41%

Calculation of percentage of beneficial ownership is based on the sum of (i) 29,255,507 outstanding shares of Issuer's Common Stock as filed with the SEC on November 10, 2008 and (ii) 266,925 shares of Issuer's Common Stock issuable upon the exercise of warrants issued to the accounts managed by the Reporting Person.
  
- (c) Number of shares as to which the person has:
  - (i) Sole power to vote or to direct the vote:
    - GAGNON SECURITIES LLC: 0
    - NEIL GAGNON: 1,542,925
  - (ii) Shared power to vote or to direct the vote:
    - GAGNON SECURITIES LLC: 1,881,164
    - NEIL GAGNON: 1,431,091
  - (iii) Sole power to dispose or to direct the disposition of:
    - GAGNON SECURITIES LLC: 0
    - NEIL GAGNON: 1,542,925
  - (iv) Shared power to dispose or to direct the disposition of:
    - GAGNON SECURITIES LLC: 1,881,164
    - NEIL GAGNON: 1,530,724

ITEM 5 OWNERSHIP OF FIVE PERCENT OR LESS OF A CLASS

Not applicable.

ITEM 6 OWNERSHIP OF MORE THAN FIVE PERCENT ON BEHALF OF ANOTHER PERSON

The Funds described above in Item the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, securities held in their respective accounts. To the knowledge of the Reporting Person, the interest in any such Fund does not exceed 5% of the class of securities. The Reporting Person disclaims beneficial ownership of all such securities.

ITEMS 7 - 9 Not Applicable

ITEM 10 CERTIFICATION

- (a) The following certification shall be included if the statement is filed pursuant to ss.240.13d-1(b): 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. [X]

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.

February 17, 2009

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Date

/s/ Neil Gagnon

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Signature

Neil Gagnon

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Name/Title

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.

NOTE: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. SEE ss.240.13d-7 for other parties for whom copies are to be sent.

ATTENTION: INTENTIONAL MISSTATEMENTS OR OMISSIONS OF FACT CONSTITUTE FEDERAL CRIMINAL VIOLATIONS (SEE 18 U.S.C. 1001)