

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
SCHEDULE 13D
Under the Securities Exchange Act of 1934
(Amendment No. 1)

Xcyte Therapies, Inc.

(Name of Issuer)

Common Stock,
(Title of Class of Securities)

98389F309
(CUSIP Number)

with a copy to:

Austin W. Marxe Allen B. Levithan, Esq.
527 Madison Avenue, Suite 2600 Lowenstein Sandler PC
New York, New York 10022 65 Livingston Avenue
Roseland, New Jersey 07068
(973) 597-2424

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

December 31, 2005
(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 section 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 section 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).

Cusip No. 98389F309

1. Names of Reporting Persons. I.R.S. Identification Nos. of above persons (entities only):

Austin W. Marxe and David M. Greenhouse

2. Check the Appropriate Box if a Member of a Group (See Instructions):

(a) [] Not Applicable

(b) []

3. SEC Use Only

4. Source of Funds (See Instructions): 00

5. Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e):

Not Applicable

6. Citizenship or Place of Organization: United States

Number of 7. Sole Voting Power: 0*
Shares Beneficially 8. Shared Voting Power: 4,524,428*
Owned by

Each Reporting 9. Sole Dispositive Power: 0*
Person With 10. Shared Dispositive Power: 4,524,428*

11. Aggregate Amount Beneficially Owned by Each Reporting Person:

4,524,428*

12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions): Not Applicable
13. Percent of Class Represented by Amount in Row (11): 23.0% *
14. Type of Reporting Person (See Instructions): IA, IN

* This is a joint filing by Austin W. Marxe (?Marxe?) and David M. Greenhouse (?Greenhouse?). Marxe and Greenhouse share sole voting and investment power over 857,036 shares of Common Stock owned by Special Situations Cayman Fund, L.P., 258,839 shares of Common Stock owned by Special Situations Fund III, L.P., 2,952,924 shares of Common Stock owned by Special Situations Fund III QP, L.P. and 455,629 shares of Common Stock owned by Special Situations Life Sciences Fund, L.P. See Items 2 and 5 of this Schedule 13D for additional information.

Item 1. Security and Issuer.

This schedule related to the common stock and warrants of XCYTE Therapies, Inc. (the ?Issuer?). The Issuer's principal executive officers are located at 1124 Columbia Street, Suite 130, Seattle, WA 98104

Item 2. Identity and Background.

The persons filing this report are Austin W. Marxe (?Marxe?) and David M. Greenhouse (?Greenhouse?), who are the controlling principals of AWM Investment Company, Inc. (?AWM?), the general partner of and investment adviser to Special Situations Cayman Fund, L.P. (?Cayman?). AWM also serves as the general partner of MGP Advisers Limited Partnership (?MGP?), the general partner of and investment adviser to Special Situations Fund III, L.P. (?SSF3?) and Special Situations Fund III QP, L.P.* (?SSFQP). Marxe and Greenhouse are also members of LS Advisers L.L.C. (?LS?), the general partner of and investment adviser to Special Situations Life Sciences Fund, L.P. (?LIFE?). (SSF3, SSFQP, Cayman, and LIFE will hereafter be referred to as, the ?Funds?).

The principal office and business address of the Reporting Persons, is 527 Madison Avenue, Suite 2600, New York NY 10022.

The principal business of each Fund is to invest in equity and equity-related securities and other securities of any kind or nature.

Mr. Marxe and Mr. Greenhouse have never been convicted in any criminal proceeding (excluding traffic violations or similar misdemeanors), nor have either of them been a party to any civil proceeding commenced before a judicial or administrative body of competent jurisdiction as a result of which he was or is now subject to a judgment, decree or final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violation with respect to such laws. Mr. Marxe and Mr. Greenhouse are citizens of the United States.

Item 3. Source and Amount of Funds or Other Consideration.

Each Fund utilized its own available net assets to purchase the securities referred to in this Schedule.

Item 4. Purpose of Transaction.

The securities referred to in this Schedule have been acquired by each of the Funds for investment purposes and not with the purpose or effect of changing or influencing control of the Issuer. Each Fund acquired the securities in the ordinary course of business and is holding the securities for the benefit of its investors.

Item 5. Interest in Securities of the Issuer.

Cayman owns 857,036 shares of Common Stock, or 4.4% of the shares outstanding, SSF3 owns 258,839 shares of Common Stock, or 1.3% of the shares outstanding, SSFQP owns 2,952,924 shares of Common Stock, or 15.0% of the shares outstanding, LIFE owns 455,629 shares of Common Stock, or 2.3% of the shares outstanding. Messrs. Marxe and Greenhouse share the power to vote and direct the disposition of all shares of Common Stock owned by each of the Funds. Messrs. Marxe and Greenhouse are deemed to beneficially own a total of 4,524,428 shares of Common Stock or 23.0% of the outstanding shares.

The following table reflects the acquisitions of Common Stock purchased by each of the Funds since the previous form 13D filed on December 23, 2005. (Each of which were effected in ordinary broker transactions):

A. Special Situations Cayman Fund, L.P.

Date
Quantity
Average Price

(Purchases)

December 28, 2005
2,100
\$0.61

Date
Quantity
Average Price

(Sales)

B. Special Situations Life Sciences Fund, L.P.

Date
Quantity
Average Price

(Purchases)

December 29 and 30, 2005
67,719
\$0.63

Date
Quantity
Average Price

(Sales)

C. Special Situations Fund III, L.P.

Date
Quantity
Average Price

(Purchases)

December 23 and 28, 2005
12,000
\$0.61

Date
Quantity
Average Price

(Sales)

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

No contracts, arrangements, understandings or similar relationships

exist with respect to the securities of the Company between Messrs. Marxe and Greenhouse and any other individual or entity.

Item 7. Material to be Filed as Exhibits.

Joint Filing Agreement.

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 14, 2006

/s/_Austin W. Marxe

Austin W. Marxe

/s/_David M. Greenhouse

David M. Greenhouse

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

JOINT FILING AGREEMENT

Austin W. Marxe and David M. Greenhouse hereby agree that the Schedule 13D to which this agreement is attached is filed on behalf of each of them.

/s/_Austin W. Marxe

Austin W. Marxe

/s/_David M. Greenhouse

David M. Greenhouse

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