ATHERSYS, INC / NEW Form SC 13D/A June 19, 2012

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION Washington, D.C. 20549

SCHEDULE 13D

(Amendment No. 5)

Under the Securities Exchange Act of 1934

Athersys, Inc. (Name of Issuer)

Common Stock
(Title of Class of Securities)

04744L106 (CUSIP Number)

OrbiMed Advisors LLC OrbiMed Capital GP III LLC Samuel D. Isaly 601 Lexington Avenue, 54th Floor New York, NY 10022 Telephone: (212) 739-6400

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

June 8, 2012

(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 §§ 240.13d-1(e), 240.13d-1(f) or 240.13d-1(g) check the following box o.

Note: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See §§ 240.13d-7(b) 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 (the "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).

(Continued on following pages)		
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SCHEDULE 13D

CUSIP No. 04744L106

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1	NAME OF REPORTING PERSONS					
1	OrbiMed Adviso	OrbiMed Advisors LLC				
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions) (a) o (b) o					
3	SEC USE ONLY	Y				
4	SOURCE OF FU	SOURCE OF FUNDS (See Instructions)				
7	N/A for events d	N/A for events described in Item 1 that triggered the requirement to file this Statement.				
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED o PURSUANT TO ITEMS 2(d) or 2(e)					
6	CITIZENSHIP (Delaware	OR PLACE OF	ORGANIZATION			
		7	SOLE VOTING POWER			
	NUMBER OF	,	0			
В	SHARES ENEFICIALLY	8	SHARED VOTING POWER			
	OWNED BY EACH	0	1,635,388			
	REPORTING	0	SOLE DISPOSITIVE POWER			
WITH	PERSON	9	0			
			SHARED DISPOSITIVE POWER			
		10	1,635,388			
	AGGREGATE A	AMOUNT BEN	EFICIALLY OWNED BY EACH REPORTING P.	ERSON		
11		INIOCI (I BEI		LIGOI		
	1,635,388					
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES o CERTAIN SHARES (See Instructions)			0		

13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)			
13	5.56%			
	TYPE OF REPORTING PERSON (See Instructions)			
14	IA			

SCHEDULE 13D

CUSIP No. 04744L106

Page 3 of 10 Pages

1	NAME OF REPORTING PERSONS					
1	OrbiMed Capital	OrbiMed Capital GP III LLC				
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions) (a) o (b) o					
3	SEC USE ONLY	Y				
4	SOURCE OF FUNDS (See Instructions)					
7	N/A for events d	N/A for events described in Item 1 that triggered the requirement to file this Statement.				
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED o PURSUANT TO ITEMS 2(d) or 2(e)					
6	CITIZENSHIP (Delaware	OR PLACE OF (ORGANIZATION			
		7	SOLE VOTING POWER			
	NUMBER OF	,	0			
В	SHARES ENEFICIALLY	8	SHARED VOTING POWER			
	OWNED BY EACH	o	1,619,952			
	REPORTING		SOLE DISPOSITIVE POWER			
WITH	PERSON	9	0			
			SHARED DISPOSITIVE POWER			
		10	1,619,952			
	AGGREGATE A	AMOUNT BEN	EFICIALLY OWNED BY EACH REPORTING PI	ERSON		
11		INIOCIVI BEIX		LIGOIV		
	1,619,952					
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES o CERTAIN SHARES (See Instructions)			0		

13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)			
	5.51%			
	TYPE OF REPORTING PERSON (See Instructions)			
14	00			

SCHEDULE 13D

CUSIP No. 04744L106

Page 4 of 10 Pages

1	NAME OF REPORTING PERSONS					
1	Samuel D. Isaly					
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions) (a) o (b) o					
3	SEC USE ONLY	ď				
4	SOURCE OF FU	JNDS (See Ins	structions)			
	N/A for events d	N/A for events described in Item 1 that triggered the requirement to file this Statement.				
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED o PURSUANT TO ITEMS 2(d) or 2(e)					
6	CITIZENSHIP OR PLACE OF ORGANIZATION United States					
		7	SOLE VOTING POWER			
	NUMBER OF	7	0			
В	SHARES ENEFICIALLY		SHARED VOTING POWER			
_	OWNED BY EACH	8	1,635,388			
	REPORTING		SOLE DISPOSITIVE POWER			
WITH	PERSON	9	0			
VV 1 1 1 1			SHARED DISPOSITIVE POWER			
		10	SHARED DISTOSITIVE TOWER			
			1,635,388			
1.1	AGGREGATE A	AMOUNT BEI	NEFICIALLY OWNED BY EACH REPORTING F	PERSON		
11	1,635,388					
12	CHECK BOX II CERTAIN SHA		EGATE AMOUNT IN ROW (11) EXCLUDES ructions)	o		

13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)			
13	5.56%			
	TYPE OF REPORTING PERSON (See Instructions)			
14	IN			

Item 1.Security and Issuer.

The class of equity securities to which this statement relates is shares of common stock, par value \$0.001 per share, ("Shares"), Shares issuable upon the exercise of warrants at a certain price per share (as described below) (the "Warrants") and vested options to purchase Shares exercisable at a weighted average exercise price of \$4.45 per share (the "Options") of Athersys, Inc. (the "Issuer"), a Delaware company with its principal executive offices located at 3201 Carnegie Avenue, Cleveland, Ohio 44115-2634. The Shares are listed on Nasdaq.

On March 9, 2012, the Issuer announced that it had entered into an agreement with certain investors, pursuant to which the Issuer agreed to issue to such investors in a private placement financing transaction 4,347,827 Shares (the "Share Issuance") and warrants to purchase up to an additional 4,347,827 Shares for an aggregate purchase price of approximately \$9.0 million (the "Offering"). The total purchase price for one Share and a warrant to purchase one Share was \$2.07. On March 14, 2012, the Offering closed. As a result of the Share Issuance, the Issuer's total number of outstanding Shares increased to 29,398,024 (the "Outstanding Share Increase"). The Reporting Persons did not participate in, or acquire or dispose of any Shares in, the Share Issuance. As a result of the Share Issuance (and more specifically, the Outstanding Share Increase), the percentage of outstanding Shares of which the Reporting Persons (as defined below) may be deemed to be the beneficial owner was reduced by more than one percent of the Issuer's Shares outstanding after completion of the Offering.

On June 8, 2012, 750,000 Warrants with a strike price of \$6.00 held by OrbiMed Private Investments III, LP ("OPI III") and OrbiMed Associates III, LP ("Associates") expired. Also on June 8, 2012, 75,000 Options awarded to Mr. Michael Sheffery for services as a director of the Issuer expired. As a result of the expiration of these Warrants and Options, the percentage of outstanding Shares that the Reporting Persons may be deemed to be the beneficial owner of was reduced again by more than one percent of the Issuer's now outstanding Shares.

Item 2.Identity and Background.

- (a) This Statement is being filed by OrbiMed Advisors LLC, a limited liability company organized under the laws of Delaware, OrbiMed Capital GP III LLC, a limited liability company organized under the laws of Delaware, and Samuel D. Isaly ("Isaly"), an individual (collectively, the "Reporting Persons").
- (b) (c) OrbiMed Advisors LLC, a registered investment adviser under the Investment Advisers Act of 1940, as amended, is the managing member or general partner of certain entities, as more particularly described in Item 6 below. OrbiMed Advisors LLC has its principal offices at 601 Lexington Avenue, 54th Floor, New York, New York 10022.

OrbiMed Capital GP III LLC is the general partner of OPI III, a limited partnership that holds Shares, as more particularly described in Item 6 below. OrbiMed Capital GP III LLC has its principal offices at 601 Lexington Avenue, 54th Floor, New York, New York 10022.

Isaly, a natural person, owns a controlling interest in OrbiMed Advisors LLC.

The directors and executive officers of OrbiMed Advisors LLC and OrbiMed Capital GP III LLC are set forth on Schedules I and II, attached hereto. Schedules I and II set forth the following information with respect to each such person:

(i)name;

(ii)business address (or residence address where indicated);

(iii)present principal occupation or employment and the name, principal business and address of any corporation or other organization in which such employment is conducted;

(iv)citizenship.

(d) – (e) During the last five years, neither the Reporting Persons nor any Person named in Schedules I or II have been (i) convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors) or (ii) a party to a civil proceeding of a judicial or administrative body of competent jurisdiction and as a result of such proceeding was or is 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.

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

Not Applicable. As described more fully in Item 1 above, the events giving rise to the obligation of the Reporting Persons to file this Statement did not involve any transactions effected by one or more Reporting Persons with respect to the Shares.

Item 4.Purpose of Transaction.

Not Applicable. As described more fully in Item 1 above, the events giving rise to the obligation of the Reporting Persons to file this Statement did not involve any transactions effected by one or more Reporting Persons with respect to the Shares.

Item 5.Interest in Securities of the Issuer.

- (a) (b) As of the date of this filing, OrbiMed Advisors LLC, OrbiMed Capital GP III LLC and Isaly may be deemed directly or indirectly, including by reason of their mutual affiliation, to be the beneficial owners of 1,635,388 Shares. Based upon information contained in the Form 8-K filed by the Issuer with the SEC on March 15, 2012, such Shares constituted approximately 5.56% of the Shares that are issued and outstanding. As a result of the agreements and relationships described in Items 2 above and Item 6 below, OrbiMed Advisors LLC, OrbiMed Capital GP III LLC and Isaly share power to direct the vote and to direct the disposition of the Shares described in this Item 5.
- (c) Since the transactions reported on in Amendment No. 4 to the Schedule 13D, the Reporting Persons have not engaged in any transactions with respect to the Shares:
- (d) Not applicable.
- (e) Not applicable.

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

In addition to the relationships between the Reporting Persons described in Items 2 and 5, OrbiMed Capital GP III LLC is the sole general partner of OPI III, pursuant to the terms of the limited partnership agreement of OPI III, and OrbiMed Advisors LLC is the sole managing member of OrbiMed Capital GP III LLC, pursuant to the terms of the limited liability company agreement of OrbiMed Capital GP III LLC. OrbiMed Advisors LLC is also the sole general partner of Associates, pursuant to the terms of the limited partnership agreement of Associates. Pursuant to these agreements and relationships, OrbiMed Advisors LLC and OrbiMed Capital GP III LLC have discretionary investment management authority with respect to the assets of OPI III and Associates. Such authority includes the power to vote and otherwise dispose of securities purchased by OPI III and Associates. The number of outstanding Shares attributable to OPI III is 1,600,450 Shares and to Associates is 15,250 Shares. OrbiMed Advisors LLC, pursuant to its authority as the managing member of OrbiMed Capital GP III LLC and the general partner of Associates, may be considered to hold indirectly 1,615,700 Shares and OrbiMed Capital GP III LLC, pursuant to its authority as the general partner of OPI III, may be considered to hold indirectly 1,600,450 Shares.

Michael B. Sheffery, a member of OrbiMed Advisors LLC served on Issuer's Board of Directors until September 2010 and was awarded number of Options for such service. Pursuant to an agreement with the Reporting Persons, Mr. Sheffery is obligated to transfer any Shares issued pursuant to an exercise of the Options to the Reporting Persons, who will distribute such Shares to OPI III and Associates on a pro-rata basis. Following the expiration of Options as described in Item 1 above, the number of Options attributable to OPI III and Associates is 19,502 and 186, respectively. Of these OrbiMed Advisors LLC and OrbiMed Capital GP III LLC may be considered to hold indirectly

19,688 and 19,502 Options, respectively.

Other than the agreements and the relationships mentioned above, to the best knowledge of the Reporting Persons, there are no contracts, arrangements, understandings or relationships (legal or otherwise) among the persons named in Item 2 and between such persons and any persons with respect to any securities of the Issuer, including, but not limited to, transfer or voting of any of the Shares, finder's fees, joint ventures, loan or option arrangements, puts or calls, guarantees of profits, division of profits or loss, or the giving of withholding of proxies.

Item 7.Materials to be Filed as Exhibits.

A.Joint Filing Agreement among OrbiMed Advisors LLC, OrbiMed Capital GP III LLC and Samuel D. Isaly.

SIGNATURES

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: June 19, 2012

OrbiMed Advisors LLC

By: /s/ Samuel D. Isaly

Name: Samuel D. Isaly Title: Managing Member

OrbiMed Capital GP III LLC

By: OrbiMed Advisors LLC

its Managing Member

By: /s/ Samuel D. Isaly

Name: Samuel D. Isaly Title: Managing Member

By:/s/ Samuel D. Isaly Name: Samuel D. Isaly

Schedule I

The name and present principal occupation of each of the executive officers and directors of OrbiMed Advisors LLC are set forth below. Unless otherwise noted, each of these persons are United States citizens and have as their business address 601 Lexington Avenue, 54th Floor, New York, NY 10022.

	Position with Reporting	
Name	Person	Principal Occupation
Samuel D. Isaly	Managing Member	Managing Member OrbiMed Advisors LLC
Michael B. Sheffery	Member	Member OrbiMed Advisors LLC
Carl L. Gordon	Member	Member OrbiMed Advisors LLC
Sven H. Borho German and Swedish Citizen	Member	Member OrbiMed Advisors LLC
Jonathan T. Silverstein	Member	Member OrbiMed Advisors LLC
W. Carter Neild	Member	Member OrbiMed Advisors LLC
Geoffrey C. Hsu	Member	Member OrbiMed Advisors LLC
Evan D. Sotiriou	Chief Financial Officer	Chief Financial Officer OrbiMed Advisors LLC

Schedule II

The business and operations of OrbiMed Capital GP III LLC are managed by the executive officers and directors of its managing member, OrbiMed Advisors LLC, set forth on Schedule I attached hereto.

EXHIBIT INDEX

Exhibit Description Page No.
A. Joint Filing Agreement among OrbiMed A-1
Advisors LLC, OrbiMed Capital GP III LLC
and Samuel D. Isaly