Cardiovascular Systems Inc Form SC 13D/A April 08, 2013

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

SCHEDULE 13D (Rule 13d-101)

INFORMATION TO BE INCLUDED IN STATEMENTS FILED PURSUANT TO § 240.13d-1(a) AND AMENDMENTS THERETO FILED PURSUANT TO § 240.13d-2(a)

UNDER THE SECURITIES EXCHANGE ACT OF 1934 (Amendment No. 9)*

Cardiovascular Systems, Inc.

(Name of Issuer)

Common Stock, \$0.001 par value per share

(Title of Class of Securities)

141619106

(CUSIP Number)

Michael R. Murphy
Discovery Group I, LLC
191 North Wacker Drive
Suite 1685
Chicago, Illinois 60606
Telephone Number: (312) 265-9600

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

April 4, 2013

(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 §§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 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).

1.	Names of Reporting Persons. Discovery Equity Partners, L.P.		
2.	Check the Appropriat (a) (b)	te Box if a Member of a Group (See Instructions) o o	
3.	SEC Use Only		
4.	Source of Funds (See Instructions) WC		
5.	Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e) o		
6.	Citizenship or Place of Organization Illinois		
January C	7.	Sole Voting Power None.	
Number of Shares Beneficially	8.	Shared Voting Power 1,102,132	
Owned by Each Reporting Person With	9.	Sole Dispositive Power None.	
	10.	Shared Dispositive Power 1,102,132	
11.	Aggregate Amount Beneficially Owned by Each Reporting Person 1,102,132		
12.	Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions) o		
13.	Percent of Class Represented by Amount in Row (11) 5.2%		
14.	Type of Reporting Person (See Instructions) PN		
2-			

1.	Names of Reporting Persons. Discovery Group I, LLC		
2.	Check the Appropria (a) (b)	te Box if a Member of a Group (See Instructions) o o	
3.	SEC Use Only		
4.	Source of Funds (See Instructions) AF		
5.	Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e) o		
6.	Citizenship or Place of Organization Delaware		
	7.	Sole Voting Power None.	
Number of Shares Beneficially	8.	Shared Voting Power 1,102,132	
Owned by Each Reporting Person With	9.	Sole Dispositive Power None.	
reison with	10.	Shared Dispositive Power 1,102,132	
11.	Aggregate Amount Beneficially Owned by Each Reporting Person 1,102,132		
12.	Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions) o		
13.	Percent of Class Represented by Amount in Row (11) 5.2%		
14.	Type of Reporting Person (See Instructions) IA		
-3-			

1.	Names of Reporting Persons. Daniel J. Donoghue		
2.	Check the Appropriat (a) (b)	te Box if a Member of a Group (See Instructions) o o	
3.	SEC Use Only		
4.	Source of Funds (See Instructions) AF		
5.	Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e) o		
6.	Citizenship or Place of Organization United States of America		
	7.	Sole Voting Power None.	
Number of Shares Beneficially	8.	Shared Voting Power 1,102,132	
Owned by Each Reporting Person With	9.	Sole Dispositive Power None.	
CISOII WILLI	10.	Shared Dispositive Power 1,102,132	
11.	Aggregate Amount Beneficially Owned by Each Reporting Person 1,102,132		
12.	Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions) o		
13.	Percent of Class Represented by Amount in Row (11) 5.2%		
14.	Type of Reporting Person (See Instructions) IN		

1.	Names of Reporting Persons. Michael R. Murphy		
2.	Check the Appropriat (a) (b)	te Box if a Member of a Group (See Instructions) o o	
3.	SEC Use Only		
4.	Source of Funds (See Instructions) AF		
5.	Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e) o		
6.	Citizenship or Place of Organization United States of America		
	7.	Sole Voting Power None.	
Number of Shares Beneficially	8.	Shared Voting Power 1,102,132	
Owned by Each Reporting Person With	9.	Sole Dispositive Power None.	
	10.	Shared Dispositive Power 1,102,132	
11.	Aggregate Amount Beneficially Owned by Each Reporting Person 1,102,132		
12.	Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions) o		
13.	Percent of Class Represented by Amount in Row (11) 5.2%		
14.	Type of Reporting Person (See Instructions) IN		
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Item 1. Security and Issuer

This Amendment No. 9 to Schedule 13D ("Amendment No. 9") relates to the Common Stock, \$0.001 par value per share (the "Common Stock"), of Cardiovascular Systems, Inc., a Delaware corporation (the "Company"), which has its principal executive offices at 651 Campus Drive, St. Paul, Minnesota 55112. This Amendment No. 9 amends and supplements, as set forth below, the information contained in items 1, 3, 4, 5 and 6 of the Schedule 13D filed by the Reporting Persons with respect to the Company on August 17, 2011, as amended by Amendment No. 1 thereto filed by the Reporting Persons with respect to the Company on August 29, 2011, Amendment No. 2 thereto filed by the Reporting Persons with respect to the Company on September 8, 2011, Amendment No. 3 thereto filed by the Reporting Persons with respect to the Company on October 6, 2011, Amendment No. 4 thereto filed by the Reporting Persons with respect to the Company on October 12, 2011, Amendment No. 5 thereto filed by the Reporting Persons with respect to the Company on September 26, 2012, Amendment No. 6 thereto filed by the Reporting Persons with respect to the Company on October 22, 2012, Amendment No. 7 thereto filed by the Reporting Persons with respect to the Company on November 13, 2012, and Amendment No. 8 thereto filed by the Reporting Persons with respect to the Company on December 21, 2012 (as so amended, the "Schedule 13D"). All capitalized terms used herein but not defined herein have the meanings set forth in the Schedule 13D. Except as amended by this Amendment No. 9, all information contained in the Schedule 13D is, after reasonable inquiry and to the best of the Reporting Persons' knowledge and belief, complete and correct as of the date of this Amendment No. 9.

Item 3. Source and Amount of Funds or Other Consideration

Item 3 of the Schedule 13D is hereby amended to read in its entirety as follows:

The total purchase price for the 1,102,132 shares of Common Stock beneficially owned by the Reporting Persons as of April 5, 2013 was approximately \$12,370,573. The source of such funds was the assets of Discovery Equity Partners, including proceeds of margin loans under margin loan facilities maintained in the ordinary course of business by Discovery Equity Partners with a broker on customary terms and conditions. Discovery Equity Partners is the legal owner of all of the Common Stock beneficially owned by Discovery Group and Messrs. Donoghue and Murphy.

Item 4. Purpose of Transaction

The first sentence of Item 4 of the Schedule 13D is hereby amended to read as follows:

The Reporting Persons acquired beneficial ownership of the shares of Common Stock reported herein as part of their investment activities on behalf of Discovery Equity Partners.

Item 5. Interest in Securities of the Issuer

Item 5 of the Schedule 13D is hereby amended to read in its entirety as follows:

The information concerning percentages of ownership set forth below is based on 21,090,684 shares of Common Stock reported outstanding as of February 7, 2013 in the Company's Quarterly Report on Form 10-Q for the quarter ended December 31, 2012.

Discovery Equity Partners beneficially owns 1,102,132 shares of Common Stock as of April 5, 2013, which represents 5.2% of the outstanding Common Stock

Discovery Group beneficially owns 1,102,132 shares of Common Stock as of April 5, 2013, which represents 5.2% of the outstanding Common Stock.

Mr. Donoghue beneficially owns 1,102,132 shares of Common Stock as of April 5, 2013, which represents 5.2% of the outstanding Common Stock.

Mr. Murphy beneficially owns 1,102,132 shares of Common Stock as of April 5, 2013, which represents 5.2% of the outstanding Common Stock.

Discovery Group is the sole general partner of Discovery Equity Partners. Messrs. Donoghue and Murphy are the sole managing members of Discovery Group. As a consequence, Discovery Group and Messrs. Donoghue and Murphy may be deemed to share beneficial ownership of all of the shares of Common Stock owned by Discovery Equity Partners.

The transactions in Common Stock effected by the Reporting Persons during the past 60 days are set out in Exhibit 1 hereto.

No person other than Discovery Equity Partners is known to any Reporting Person to have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, any of the shares of Common Stock reported herein.

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

Item 6 of the Schedule 13D is hereby amended to read in its entirety as follows:

There are no contracts, arrangements, understandings or relationships (legal or otherwise) between or among any of the Reporting Persons and any other person with respect to any securities of the Company other than the governing documents of Discovery Group and Discovery Equity Partners, the margin loan facilities referred to under Item 3 of the Schedule 13D, the Joint Filing Agreements of the Reporting Persons with respect to the Schedule 13D that were included as exhibits thereto, the Joint Filing Agreement of the Reporting Persons with respect to this Amendment No. 9 included as Exhibit 2 to this Amendment No. 9, and the Powers of Attorney granted by Messrs. Donoghue and Murphy with respect to reports under Section 13 of the Securities Exchange Act of 1934, as amended, which Powers of Attorney are included as Exhibit 3 and Exhibit 4, respectively, to this Amendment No. 9.

Item 7. Material to Be Filed as Exhibits

Exhibit 1: List of transactions effected by the Reporting Persons in the Company's Common Stock during the 60-day period preceding this filing.

Exhibit 2: Joint Filing Agreement dated as of April 8, 2013, by and among Discovery Equity Partners; Discovery Group; Daniel J. Donoghue; and Michael R. Murphy.

Exhibit 3: Power of Attorney of Daniel J. Donoghue, dated as of April 28, 2008.

Exhibit 4: Power of Attorney of Michael R. Murphy, dated as of April 28, 2008.

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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.

April 8, 2013 Date

DISCOVERY GROUP I, LLC, for itself and as general partner of DISCOVERY EQUITY PARTNERS, L.P.

By: Michael R. Murphy* Signature

Michael R. Murphy, Managing Member Name/Title

Daniel J. Donoghue*
Signature

Daniel J. Donoghue Name/Title

Michael R. Murphy*
Signature

Michael R. Murphy Name/Title

*By: /s/ Mark Buckley
Mark Buckley
Attorney-in-Fact for Daniel J. Donoghue
Attorney-in-Fact for Michael R. Murphy

Exhibit Index

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- Exhibit 3 Power of Attorney of Daniel J. Donoghue, dated as of April 28, 2008.
- Exhibit 4 Power of Attorney of Michael R. Murphy, dated as of April 28, 2008.

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