

CARDIOVASCULAR SYSTEMS INC

Filed by
DISCOVERY GROUP I, LLC

FORM SC 13D/A (Amended Statement of Beneficial Ownership)

Filed 12/21/12

Address	651 CAMPUS DRIVE ST PAUL, MN 55112
Telephone	651-259-1600
CIK	0001180145
Symbol	CSII
SIC Code	3841 - Surgical and Medical Instruments and Apparatus
Industry	Medical Equipment & Supplies
Sector	Healthcare
Fiscal Year	06/30

**UNITED STATES
SECURITIES AND EXCHANGE
COMMISSION**

Washington, D.C. 20549

SCHEDULE 13D

Under the Securities Exchange Act of 1934
(Amendment No. 8)*

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)

December 19, 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 of §§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 §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 Appropriate Box if a Member of a Group (See Instructions)
(a)
(b)

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)

6. Citizenship or Place of Organization
Illinois

7. Sole Voting Power
None.

8. Shared Voting Power
1,265,370

9. Sole Dispositive Power
None.

10. Shared Dispositive Power
1,265,370

11. Aggregate Amount Beneficially Owned by Each Reporting Person
1,265,370

12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)

13. Percent of Class Represented by Amount in Row (11)
6.1%

14. Type of Reporting Person (See Instructions)
PN

Number of
Shares
Beneficially
Owned by
Each
Reporting
Person With

1. Names of Reporting Persons.
Discovery Group I, LLC

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

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)

6. Citizenship or Place of Organization
Delaware

7. Sole Voting Power
None.

8. Shared Voting Power
1,327,542

9. Sole Dispositive Power
None.

10. Shared Dispositive Power
1,327,542

11. Aggregate Amount Beneficially Owned by Each Reporting Person
1,327,542

12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)

13. Percent of Class Represented by Amount in Row (11)
6.4%

14. Type of Reporting Person (See Instructions)
IA

Number of
Shares
Beneficially
Owned by
Each
Reporting
Person With

1. Names of Reporting Persons.
Daniel J. Donoghue

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

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)

6. Citizenship or Place of Organization
United States of America

7. Sole Voting Power
None.

8. Shared Voting Power
1,327,542

9. Sole Dispositive Power
None.

10. Shared Dispositive Power
1,327,542

11. Aggregate Amount Beneficially Owned by Each Reporting Person
1,327,542

12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)

13. Percent of Class Represented by Amount in Row (11)
6.4%

14. Type of Reporting Person (See Instructions)
IN

Number of
Shares
Beneficially
Owned by
Each
Reporting
Person With

1. Names of Reporting Persons.
Michael R. Murphy

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

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)

6. Citizenship or Place of Organization
United States of America

7. Sole Voting Power
None.

8. Shared Voting Power
1,327,542

9. Sole Dispositive Power
None.

10. Shared Dispositive Power
1,327,542

11. Aggregate Amount Beneficially Owned by Each Reporting Person
1,327,542

12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)

13. Percent of Class Represented by Amount in Row (11)
6.4%

14. Type of Reporting Person (See Instructions)
IN

Number of
Shares
Beneficially
Owned by
Each
Reporting
Person With

Item 1. Security and Issuer

This Amendment No. 8 to Schedule 13D (“ **Amendment No. 8** ”) 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. 8 amends and supplements, as set forth below, the information contained in items 1, 3, 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, and Amendment No. 7 thereto filed by the Reporting Persons with respect to the Company on November 13, 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. 8, 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. 8.

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 1,327,542 shares of Common Stock beneficially owned by Discovery Group and Messrs. Donoghue and Murphy as of December 20, 2012 was approximately \$15,142,717, and the total purchase price for the 1,265,370 shares of Common Stock beneficially owned by Discovery Equity Partners as of such date was approximately \$14,631,721. The source of such funds was the assets of Discovery Equity Partners and another private investment partnership (collectively, the “ **Partnerships** ”) over which Discovery Group exercises discretionary investment management authority, and proceeds of margin loans under margin loan facilities maintained in the ordinary course of business by the Partnerships with a broker on customary terms and conditions. The Partnerships are the legal owner of all of the Common Stock beneficially owned by Discovery Group and Messrs. Donoghue and Murphy.

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 20,710,714 shares of Common Stock reported outstanding as of November 2, 2012 in the Company’s Quarterly Report on Form 10-Q for the quarter ended September 30, 2012.

Discovery Equity Partners beneficially owns 1,265,370 shares of Common Stock as of December 20, 2012, which represents 6.1% of the outstanding Common Stock

Discovery Group beneficially owns 1,327,542 shares of Common Stock as of December 20, 2012, which represents 6.4% of the outstanding Common Stock.

Mr. Donoghue beneficially owns 1,327,542 shares of Common Stock as of December 20, 2012, which represents 6.4% of the outstanding Common Stock.

Mr. Murphy beneficially owns 1,327,542 shares of Common Stock as of December 20, 2012, which represents 6.4% of the outstanding Common Stock.

Discovery Group is the sole general partner of Discovery Equity Partners and has sole discretionary investment authority with respect to the other Partnership's investment in the Common Stock. 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 both of the Partnerships, while Discovery Equity Partners shares beneficial ownership with Discovery Group and Messrs. Donoghue and Murphy of only the shares of Common Stock owned by it.

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 the Partnerships 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 the Partnerships, 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. 8 included as Exhibit 2 to this Amendment No. 8, 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. 8.

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 December 21, 2012, 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.

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.

December 21, 2012

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

- 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 December 21, 2012, 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.

TRANSACTIONS DURING THE PAST 60 DAYS

The Reporting Persons engaged in the following transactions in shares of Common Stock of the Company during the past 60 days. Such transactions involved the sale of shares on the NASDAQ Global Market. Certain of the prices reported below reflect the weighted average sale price of the shares of Common Stock sold on the relevant date. The Reporting Persons hereby undertake to provide upon request to the SEC staff full information regarding the number of shares and prices at which each transaction was effected.

Date	Type	Price	Quantity
11/8/2012	Sale	\$ 12.1053 ¹	6237
11/12/2012	Sale	\$ 12.1925 ²	5343
11/13/2012	Sale	\$ 12.1500	300
11/20/2012	Sale	\$ 11.2426 ³	6113
11/23/2012	Sale	\$ 11.2500	1199
11/26/2012	Sale	\$ 11.4318 ⁴	5171
11/27/2012	Sale	\$ 11.7464 ⁵	4052
11/28/2012	Sale	\$ 11.4984 ⁶	4194
11/29/2012	Sale	\$ 11.7451 ⁷	5235
11/30/2012	Sale	\$ 11.6477 ⁸	3240
12/3/2012	Sale	\$ 11.6500	2000
12/4/2012	Sale	\$ 11.8469 ⁹	4900
12/5/2012	Sale	\$ 11.5356 ¹⁰	1979
12/6/2012	Sale	\$ 11.7971 ¹¹	17521
12/7/2012	Sale	\$ 12.0105 ¹²	3149
12/10/2012	Sale	\$ 12.0614 ¹³	31647
12/11/2012	Sale	\$ 12.8649 ¹⁴	40713
12/12/2012	Sale	\$ 12.8601 ¹⁵	13165
12/13/2012	Sale	\$ 12.5543 ¹⁶	8962
12/14/2012	Sale	\$ 12.6681 ¹⁷	20000
12/17/2012	Sale	\$ 12.6849 ¹⁸	9500
12/18/2012	Sale	\$ 12.5484 ¹⁹	25976
12/19/2012	Sale	\$ 12.6358 ²⁰	12699
12/20/2012	Sale	\$ 12.6622 ²¹	12939

¹ This transaction was executed in multiple trades at prices ranging from \$12.09 – 12.15.

² This transaction was executed in multiple trades at prices ranging from \$12.07 – 12.23.

³ This transaction was executed in multiple trades at prices ranging from \$11.15 – 11.35.

⁴ This transaction was executed in multiple trades at prices ranging from \$11.25 – 11.60.

⁵ This transaction was executed in multiple trades at prices ranging from \$11.68 – 11.84.

⁶ This transaction was executed in multiple trades at prices ranging from \$11.47 – 11.57.

⁷ This transaction was executed in multiple trades at prices ranging from \$11.60 – 11.95.

⁸ This transaction was executed in multiple trades at prices ranging from \$11.64 – 11.75.

⁹ This transaction was executed in multiple trades at prices ranging from \$11.75 – 11.90.

¹⁰ This transaction was executed in multiple trades at prices ranging from \$11.50 – 11.75.

¹¹ This transaction was executed in multiple trades at prices ranging from \$11.60 – 12.00.

¹² This transaction was executed in multiple trades at prices ranging from \$12.00 – 12.03.

¹³ This transaction was executed in multiple trades at prices ranging from \$11.95 – 12.15.

¹⁴ This transaction was executed in multiple trades at prices ranging from \$12.40 – 12.95.

¹⁵ This transaction was executed in multiple trades at prices ranging from \$12.65 – 12.91.

¹⁶ Due to incomplete data available to the Reporting Persons, the Reporting Persons are reporting the average price of transactions effected on this date.

¹⁷ This transaction was executed in multiple trades at prices ranging from \$12.50 – 12.88.

¹⁸ This transaction was executed in multiple trades at prices ranging from \$12.62 – 12.75.

¹⁹ This transaction was executed in multiple trades at prices ranging from \$12.45 – 12.63.

²⁰ This transaction was executed in multiple trades at prices ranging from \$12.60 – 12.65.

²¹ This transaction was executed in multiple trades at prices ranging from \$12.64 – 12.68.

JOINT FILING AGREEMENT

The undersigned hereby agree to the joint filing of the Amendment No. 8 to Schedule 13D to which this Agreement is attached.

Dated: December 21, 2012

DISCOVERY GROUP I, LLC
for itself and on behalf of
DISCOVERY EQUITY PARTNERS, L.P.

By Michael R. Murphy*
Michael R. Murphy
Managing Member

Daniel J. Donoghue*
Daniel J. Donoghue

Michael R. Murphy*
Michael R. Murphy

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

POWER OF ATTORNEY

The undersigned, Daniel J. Donoghue, hereby appoints Mark Buckley his true and lawful attorney-in-fact and agent, with full power to execute and file with the United States Securities and Exchange Commission and any stock exchange or similar authority, for and on his behalf in any and all capacities, any and all reports required to be filed pursuant to Section 13 of the Securities Exchange Act of 1934 and the rules thereunder on Schedule 13D or 13G, any and all amendments to such reports, with all exhibits, and any other forms or documents as may be necessary in connection with the filing of such reports with the United States Securities and Exchange Commission and any stock exchange or similar authority, granting unto said attorney full power and authority to do and perform any and all acts for and on behalf of the undersigned which may be necessary or desirable to complete, as fully as the undersigned might or could do in person.

This Power of Attorney shall remain in full force and effect until revoked by the undersigned in a signed writing delivered to the foregoing attorney-in-fact and agent.

IN WITNESS WHEREOF the undersigned has caused this Power of Attorney to be executed this 28th day of April, 2008.

/s/ Daniel J. Donoghue
Daniel J. Donoghue

STATE OF)
ILLINOIS)
) SS.
COUNTY OF)
COOK)

I, Kareema M. Cruz, a Notary Public in and for the County of Cook, State of Illinois, DO HEREBY CERTIFY that Daniel J. Donoghue, who is personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that he signed and delivered the said instrument as his own free and voluntary act, for the uses and purposes therein set forth.

Given under my hand and notarial seal, this 28th day of April, 2008.

/s/ Kareema M. Cruz
Notary Public

POWER OF ATTORNEY

The undersigned, Michael R. Murphy, hereby appoints Mark Buckley his true and lawful attorney-in-fact and agent, with full power to execute and file with the United States Securities and Exchange Commission and any stock exchange or similar authority, for and on his behalf in any and all capacities, any and all reports required to be filed pursuant to Section 13 of the Securities Exchange Act of 1934 and the rules thereunder on Schedule 13D or 13G, any and all amendments to such reports, with all exhibits, and any other forms or documents as may be necessary in connection with the filing of such reports with the United States Securities and Exchange Commission and any stock exchange or similar authority, granting unto said attorney full power and authority to do and perform any and all acts for and on behalf of the undersigned which may be necessary or desirable to complete, as fully as the undersigned might or could do in person.

This Power of Attorney shall remain in full force and effect until revoked by the undersigned in a signed writing delivered to the foregoing attorney-in-fact and agent.

IN WITNESS WHEREOF the undersigned has caused this Power of Attorney to be executed this 28th day of April, 2008.

/s/ Michael R. Murphy
Michael R. Murphy

STATE OF)
ILLINOIS)
) SS.
COUNTY OF)
COOK)

I, Kareema M. Cruz, a Notary Public in and for the County of Cook, State of Illinois, DO HEREBY CERTIFY that Michael R. Murphy, who is personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that he signed and delivered the said instrument as his own free and voluntary act, for the uses and purposes therein set forth.

Given under my hand and notarial seal, this 28th day of April, 2008.

/s/ Kareema M. Cruz
Notary Public