

T2 Biosystems, Inc.
Form SC 13G/A
February 13, 2017

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

SCHEDULE 13G
Under the Securities Exchange Act of 1934
(Amendment No. 1)*

T2 Biosystems, Inc.

(Name of Issuer)

Common Stock, par value \$0.001 per share

(Title of Class of Securities)

89853L104

(CUSIP Number)

December 31, 2016

(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).

CUSIP No. 89853L104

1 NAMES OF REPORTING PERSONS

I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Flagship Ventures Fund 2004, L.P.
2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)

(a) (b)

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

Delaware

5 SOLE VOTING POWER

NUMBER OF

SHARES 0
6 SHARED VOTING POWER

BENEFICIALLY

OWNED BY 1,632,816
EACH **7** SOLE DISPOSITIVE POWER

REPORTING

PERSON 0
8 SHARED DISPOSITIVE POWER

WITH:

1,632,816
9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

1,632,816

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

12 5.4%
TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

PN

CUSIP No. 89853L104

1 NAMES OF REPORTING PERSONS

I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Flagship Ventures General Partner LLC
2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)

(a) (b)

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

Delaware

5 SOLE VOTING POWER

NUMBER OF

SHARES 0
6 SHARED VOTING POWER

BENEFICIALLY

OWNED BY 1,632,816
EACH **7** SOLE DISPOSITIVE POWER

REPORTING

PERSON 0
8 SHARED DISPOSITIVE POWER

WITH:

1,632,816
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1,632,816

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

12 5.4%
TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

OO

CUSIP No. 89853L104

1 NAMES OF REPORTING PERSONS

I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Flagship Ventures Fund IV, L.P.
2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)

(a) (b)

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

Delaware

5 SOLE VOTING POWER

NUMBER OF

SHARES 0
6 SHARED VOTING POWER

BENEFICIALLY

OWNED BY 317,767
EACH **7** SOLE DISPOSITIVE POWER

REPORTING

PERSON 0
8 SHARED DISPOSITIVE POWER

WITH:

317,767
9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

317,767

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

1.0%
12 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

PN

CUSIP No. 89853L104

1 NAMES OF REPORTING PERSONS

I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Flagship Ventures Fund IV General Partner LLC
2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)

(a) (b)

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

Delaware

5 SOLE VOTING POWER

NUMBER OF

SHARES 0
6 SHARED VOTING POWER

BENEFICIALLY

OWNED BY 317,767
EACH **7** SOLE DISPOSITIVE POWER

REPORTING

PERSON 0
8 SHARED DISPOSITIVE POWER

WITH:

317,767
9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

317,767

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

1.0%
12 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

OO

CUSIP No. 89853L104

1 NAMES OF REPORTING PERSONS

I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Noubar B. Afeyan, Ph.D.

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)

(a) (b)

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

United States of America

5 SOLE VOTING POWER

NUMBER OF

SHARES **6** 0 SHARED VOTING POWER

BENEFICIALLY

OWNED BY
EACH **7** 1,950,583 SOLE DISPOSITIVE POWER

REPORTING

PERSON **8** 0 SHARED DISPOSITIVE POWER

WITH:

1,950,583

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

1,950,583

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

12 6.4%
TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

IN

CUSIP No. 89853L104

1 NAMES OF REPORTING PERSONS

I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Edwin M. Kania, Jr.

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)

(a) (b)

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

United States of America

5 SOLE VOTING POWER

NUMBER OF

SHARES **6** 0 SHARED VOTING POWER

BENEFICIALLY

OWNED BY
EACH **7** 1,950,583 SOLE DISPOSITIVE POWER

REPORTING

PERSON **8** 0 SHARED DISPOSITIVE POWER

WITH:

1,950,583

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

1,950,583

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

12 6.4%
TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

IN

Item 1(a). Name of Issuer:

T2 Biosystems, Inc. (the Issuer)

Item 1(b). Address of Issuer s Principal Executive Offices:

101 Hartwell Avenue, Lexington, Massachusetts 02421

Item 2(a). Names of Persons Filing:

The names of the persons filing this report (collectively, the Reporting Persons) are:

Flagship Ventures Fund 2004, L.P. (Fund 2004)

Flagship Ventures General Partner LLC (Fund 2004 GP)

Flagship Ventures Fund IV, L.P. (Fund IV)

Flagship Ventures Fund IV General Partner LLC (Fund IV GP)

Noubar B. Afeyan, Ph.D. (Mr. Afeyan)

Edwin M. Kania, Jr. (Mr. Kania)

Item 2(b). Address of Principal Business Office or, if None, Residence:

The address of the principal business office of each of the Reporting Persons is:

c/o Flagship Pioneering Inc.

55 Cambridge Parkway, Suite 800E

Cambridge, Massachusetts 02142

Item 2(c). Citizenship:

Fund 2004	Delaware
Fund 2004 GP	Delaware
Fund IV	Delaware
Fund IV GP	Delaware
Mr. Afeyan	United States of America
Mr. Kania	United States of America

Item 2(d). Title of Class of Securities:

Common Stock, par value \$0.001 per share (Common Stock).

Item 2(e). CUSIP Number:

89853L104

Item 3. If this statement is filed pursuant to §§ 240.13d-1(b) or 240.13d-2(b) or (c), check whether the person filing is a:

Not applicable.

Item 4. Ownership.

The information required by this item with respect to each Reporting Person is set forth in Rows 5 through 9 and 11 of the cover page to this Schedule 13G. The ownership percentages reported are based on 30,431,301 shares of outstanding Common Stock as of November 7, 2016, as reported in the Issuer's Form 10-Q filed on November 8, 2016.

As the general partner of Fund 2004, Fund 2004 GP may be deemed to beneficially own shares of Common Stock directly held by Fund 2004. As the general partner of Fund IV, Fund IV GP may be deemed to beneficially own shares of Common Stock directly held by Fund IV. Messrs. Afeyan and Kania, as Managers of Fund 2004 GP and Fund IV GP, may be deemed to beneficially own shares of Common Stock beneficially owned by Fund 2004 GP and Fund IV GP, respectively.

Item 5. Ownership of Five Percent or Less of a Class.

If this statement is being filed to report the fact that as of the date hereof the Reporting Persons have ceased to be the beneficial owner of more than five percent of the class of securities, check the following .

Item 6. Ownership of More than Five Percent on Behalf of Another Person.

Not applicable.

Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on by the Parent Holding Company or Control Person.

Not applicable.

Item 8. Identification and Classification of Members of the Group.

Not applicable.

Item 9. Notice of Dissolution of Group.

Not applicable.

Item 10. Certification.

Not applicable.

Material Filed as Exhibits.

Exhibit 1 Agreement regarding filing of joint Schedule 13G.

SIGNATURE

After reasonable inquiry and to the best of its knowledge and belief, each of the undersigned certifies that the information set forth in this statement is true, complete and correct.

Date: February 13, 2017

FLAGSHIP VENTURES FUND 2004, L.P.

By: Flagship Ventures General Partner LLC
General Partner

By: /s/ Noubar B. Afeyan
Noubar B. Afeyan, Ph.D.
Manager

FLAGSHIP VENTURES GENERAL PARTNER LLC

By: /s/ Noubar B. Afeyan
Noubar B. Afeyan, Ph.D.
Manager

FLAGSHIP VENTURES FUND IV, L.P.

By: Flagship Ventures Fund IV General
Partner LLC

General Partner

By: /s/ Noubar B. Afeyan
Noubar B. Afeyan, Ph.D.
Manager

FLAGSHIP VENTURES FUND IV GENERAL PARTNER LLC

By: /s/ Noubar B. Afeyan
Noubar B. Afeyan, Ph.D.
Manager

/s/ NOUBAR B. AFEYAN
NOUBAR B. AFEYAN, PH.D.

/s/ EDWIN M. KANIA, JR.
EDWIN M. KANIA, JR.