

**STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP**

OMB APPROVAL	
OMB Number:	3235-0287
Estimated average burden	
hours per response:	0.5

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

1. Name and Address of Reporting Person* <u>Flagship Ventures Fund V General Partner LLC</u>  (Last) (First) (Middle) <u>55 CAMBRIDGE PARKWAY, SUITE 800E</u>  (Street) <u>CAMBRIDGE MA 02142</u>  (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <u>Kaleido Biosciences, Inc. [ KLDO ]</u>	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) <input checked="" type="checkbox"/> Director <input checked="" type="checkbox"/> 10% Owner Officer (give title below) Other (specify below)
	3. Date of Earliest Transaction (Month/Day/Year) <u>03/04/2019</u>	
	4. If Amendment, Date of Original Filed (Month/Day/Year)	

**Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned**

1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)		4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5)			5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price			
Common Stock							2,500,000	I	See Footnote <sup>(1)</sup>	
Common Stock	03/04/2019		C		1,545,852	A	(2)	1,545,852	I	See Footnote <sup>(3)</sup>
Common Stock	03/04/2019		C		4,637,555	A	(2)	4,637,555	I	See Footnote <sup>(4)</sup>
Common Stock	03/04/2019		C		426,240	A	(5)	1,972,092	I	See Footnote <sup>(3)</sup>
Common Stock	03/04/2019		C		639,360	A	(5)	639,360	I	See Footnote <sup>(6)</sup>
Common Stock	03/04/2019		C		321,337	A	(7)	2,293,429	I	See Footnote <sup>(3)</sup>
Common Stock	03/04/2019		C		964,010	A	(7)	5,601,565	I	See Footnote <sup>(4)</sup>
Common Stock	03/04/2019		C		1,285,347	A	(7)	1,285,347	I	See Footnote <sup>(9)</sup>
Common Stock	03/04/2019		C		625,625	A	(8)	6,227,190	I	See Footnote <sup>(4)</sup>
Common Stock	03/04/2019		C		625,625	A	(8)	1,910,972	I	See Footnote <sup>(9)</sup>
Common Stock	03/04/2019		P		266,667	A	\$15	2,560,096	I	See Footnote <sup>(3)</sup>
Common Stock	03/04/2019		P		333,333	A	\$15	6,560,523	I	See Footnote <sup>(4)</sup>
Common Stock	03/04/2019		P		333,333	A	\$15	2,244,305	I	See Footnote <sup>(9)</sup>

**Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)**

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)		5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)		6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4)		8. Price of Derivative Security (Instr. 5)	9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
				Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares				
Series A Preferred Stock	(2)	03/04/2019		C			3,091,704	(2)	(2)	Common Stock	1,545,852	(2)	0	I	See Footnote <sup>(3)</sup>
Series A Preferred Stock	(2)	03/04/2019		C			9,275,111	(2)	(2)	Common Stock	4,637,555	(2)	0	I	See Footnote <sup>(4)</sup>

**Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned  
(e.g., puts, calls, warrants, options, convertible securities)**

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)		5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)		6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4)		8. Price of Derivative Security (Instr. 5)	9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
				Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares				
Series A-1 Preferred Stock	(5)	03/04/2019		C			852,480	(5)	(5)	Common Stock	426,240	(5)	0	I	See Footnote <sup>(3)</sup>
Series A-1 Preferred Stock	(5)	03/04/2019		C			1,278,720	(5)	(5)	Common Stock	639,360	(5)	0	I	See Footnote <sup>(6)</sup>
Series B Preferred Stock	(7)	03/04/2019		C			642,674	(7)	(7)	Common Stock	321,337	(7)	0	I	See Footnote <sup>(3)</sup>
Series B Preferred Stock	(7)	03/04/2019		C			1,928,021	(7)	(7)	Common Stock	964,010	(7)	0	I	See Footnote <sup>(4)</sup>
Series B Preferred Stock	(7)	03/04/2019		C			2,570,694	(7)	(7)	Common Stock	1,285,347	(7)	0	I	See Footnote <sup>(9)</sup>
Series C Preferred Stock	(8)	03/04/2019		C			1,251,251	(8)	(8)	Common Stock	625,625	(8)	0	I	See Footnote <sup>(4)</sup>
Series C Preferred Stock	(8)	03/04/2019		C			1,251,251	(8)	(8)	Common Stock	625,625	(8)	0	I	See Footnote <sup>(9)</sup>

1. Name and Address of Reporting Person\*

[Flagship Ventures Fund V General Partner LLC](#)

(Last) (First) (Middle)

55 CAMBRIDGE PARKWAY, SUITE 800E

(Street)

CAMBRIDGE MA 02142

(City)

(State)

(Zip)

1. Name and Address of Reporting Person\*

[Flagship Ventures Fund V, L.P.](#)

(Last) (First) (Middle)

55 CAMBRIDGE PARKWAY, SUITE 800E

(Street)

CAMBRIDGE MA 02142

(City)

(State)

(Zip)

1. Name and Address of Reporting Person\*

[Flagship VentureLabs V LLC](#)

(Last) (First) (Middle)

55 CAMBRIDGE PARKWAY, SUITE 800E

(Street)

CAMBRIDGE MA 02142

(City)

(State)

(Zip)

1. Name and Address of Reporting Person\*

[Flagship VentureLabs V Manager LLC](#)

(Last) (First) (Middle)

55 CAMBRIDGE PARKWAY, SUITE 800E

(Street)

CAMBRIDGE MA 02142

(City)

(State)

(Zip)

1. Name and Address of Reporting Person\*

[Flagship Pioneering Inc.](#)

(Last) (First) (Middle)  
55 CAMBRIDGE PARKWAY, SUITE 800E

(Street)  
CAMBRIDGE MA 02142

(City) (State) (Zip)

1. Name and Address of Reporting Person\*

[Nutritional Health Disruptive Innovation Fund, L.P.](#)

(Last) (First) (Middle)  
55 CAMBRIDGE PARKWAY, SUITE 800E

(Street)  
CAMBRIDGE MA 02142

(City) (State) (Zip)

1. Name and Address of Reporting Person\*

[Nutritional Health Side Fund, L.P.](#)

(Last) (First) (Middle)  
55 CAMBRIDGE PARKWAY, SUITE 800E

(Street)  
CAMBRIDGE MA 02142

(City) (State) (Zip)

1. Name and Address of Reporting Person\*

[Flagship Ventures Opportunities Fund I, L.P.](#)

(Last) (First) (Middle)  
55 CAMBRIDGE PARKWAY, SUITE 800E

(Street)  
CAMBRIDGE MA 02142

(City) (State) (Zip)

1. Name and Address of Reporting Person\*

[Flagship Ventures Opportunities Fund I General Partner LLC](#)

(Last) (First) (Middle)  
55 CAMBRIDGE PARKWAY, SUITE 800E

(Street)  
CAMBRIDGE MA 02142

(City) (State) (Zip)

1. Name and Address of Reporting Person\*

[AFEYAN NOUBAR](#)

(Last) (First) (Middle)  
55 CAMBRIDGE PARKWAY, SUITE 800E

(Street)  
CAMBRIDGE MA 02142

(City) (State) (Zip)

**Explanation of Responses:**

1. Shares held by Flagship VentureLabs V LLC ("VentureLabs V"). Flagship Ventures Fund V, L.P. ("Flagship Fund V") is a member of VentureLabs V. Flagship Ventures Fund V General Partner LLC ("Flagship Fund V GP") is the general partner of Flagship Fund V. Flagship VentureLabs V Manager LLC ("VentureLabs V Manager") serves as manager of VentureLabs V. Flagship Pioneering, Inc. ("Flagship Pioneering") is the manager of VentureLabs V Manager. Noubar B. Afeyan, Ph.D. serves as sole manager of Flagship Fund V GP and as sole director of Flagship Pioneering. Each of these entities and Noubar B. Afeyan, Ph.D. may be deemed to share voting and investment power with respect to all shares held by VentureLabs V. Each of the reporting persons disclaims beneficial ownership of the shares except to the extent of his or its pecuniary interest therein.

2. Each share of Series A Preferred Stock converted into shares of the Issuer's common stock, par value \$0.001 ("Common Stock"), on a one-for-two basis upon the closing of the Issuer's initial public offering.

3. Shares held by Flagship Fund V. Flagship Fund V GP is the general partner of Flagship Fund V. Noubar B. Afeyan, Ph.D. serves as sole manager of Flagship Fund V GP and may be deemed to possess sole voting

- and investment power with respect to all shares held by Flagship Fund V. Each of the reporting persons disclaims beneficial ownership of the shares except to the extent of his or its pecuniary interest therein.
4. Shares held by Nutritional Health Disruptive Innovation Fund, L.P. ("Nutritional Innovation Fund"). Flagship Fund V GP is the general partner of Nutritional Innovation Fund. Noubar B. Afeyan, Ph.D. serves as sole manager of Flagship Fund V GP and may be deemed to possess sole voting and investment power with respect to all shares held by Nutritional Innovation Fund. Each of the reporting persons disclaims beneficial ownership of the shares except to the extent of his or its pecuniary interest therein.
  5. Each share of Series A-1 Preferred Stock converted into shares of the Issuer's Common Stock on a one-for-two basis upon the closing of the Issuer's initial public offering.
  6. Shares held by Nutritional Health Side Fund, L.P. ("Nutritional Health Side Fund"). Flagship Fund V GP is the general partner of Nutritional Health Side Fund. Noubar B. Afeyan, Ph.D. serves as sole manager of Flagship Fund V GP and may be deemed to possess sole voting and investment power with respect to all shares held by Nutritional Health Side Fund. Each of the reporting persons disclaims beneficial ownership of the shares except to the extent of his or its pecuniary interest therein.
  7. Each share of Series B Preferred Stock converted into shares of the Issuer's Common Stock on a one-for-two basis upon the closing of the Issuer's initial public offering.
  8. Each share of Series C Preferred Stock converted into shares of the Issuer's Common Stock on a one-for-two basis upon the closing of the Issuer's initial public offering.
  9. Shares held by Flagship Ventures Opportunities Fund I, L.P. ("Flagship Opportunities I"). Flagship Ventures Opportunities Fund I General Partner LLC ("Flagship Opportunities GP") is the general partner of Flagship Opportunities I. Noubar B. Afeyan, Ph.D. serves as sole manager of Flagship Opportunities GP and may be deemed to possess sole voting and investment power with respect to all shares held by Flagship Opportunities I. Each of the reporting persons disclaims beneficial ownership of the shares except to the extent of his or its pecuniary interest therein.

**Remarks:**

Due to limitations of the electronic filing system, each of Flagship Ventures Fund IV General Partner LLC, Flagship Ventures Fund IV, L.P., Flagship VentureLabs IV LLC, Flagship Ventures 2007 General Partner LLC, Flagship Ventures Fund 2007, L.P., Cadena LLC, Edwin M. Kania Jr. and Noubar B. Afeyan, Ph.D. are filing a separate Form 4 with respect to securities of the Issuer.

Flagship Ventures Fund V  
General Partner LLC, By: /s/  
Noubar B. Afeyan, Name: 03/06/2019  
Noubar B. Afeyan, Ph.D., Title:  
Manager

Flagship Ventures Fund V, L.P.,  
By: Flagship Ventures Fund V  
General Partner LLC, its general 03/06/2019  
partner, By: /s/ Noubar B.  
Afeyan, Name: Noubar B.  
Afeyan, Ph.D., Title: Manager

Flagship Pioneering, Inc., By: /s/  
Noubar B. Afeyan, Name: 03/06/2019  
Noubar B. Afeyan, Ph.D., Title:  
Sole Director

Flagship VentureLabs V  
Manager LLC, By: Flagship  
Pioneering, Inc., its manager, 03/06/2019  
By: /s/ Noubar B. Afeyan,  
Name: Noubar B. Afeyan,  
Ph.D., Title: Sole Director

Flagship VentureLabs V LLC,  
By: Flagship VentureLabs V  
Manager LLC, its manager, By: 03/06/2019  
Flagship Pioneering, Inc., its  
manager, By: /s/ Noubar B.  
Afeyan, Name: Noubar B.  
Afeyan, Ph.D., Title: Sole  
Director

Nutritional Health Disruptive  
Innovation Fund, L.P., By:  
Flagship Ventures Fund V  
General Partner LLC, its general 03/06/2019  
partner, By: /s/ Noubar B.  
Afeyan, Name: Noubar B.  
Afeyan, Ph.D., Title: Manager

Nutritional Health Side Fund,  
L.P., By: Flagship Ventures  
Fund V General Partner LLC, its 03/06/2019  
general partner, By: /s/ Noubar  
B. Afeyan, Name: Noubar B.  
Afeyan, Ph.D., Title: Manager

Flagship Ventures Opportunities  
Fund I General Partner LLC,  
By: /s/ Noubar B. Afeyan, 03/06/2019  
Name: Noubar B. Afeyan,  
Ph.D., Title: Manager

Flagship Ventures Opportunities  
Fund I, L.P., By: Flagship  
Ventures Opportunities Fund I  
General Partner LLC, its general 03/06/2019  
partner, By: /s/ Noubar B.  
Afeyan, Name: Noubar B.  
Afeyan, Ph.D., Title: Manager

Noubar B. Afeyan, Ph.D., By: 03/06/2019  
/s/ Noubar B. Afeyan

\*\* Signature of Reporting Person Date

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

\* If the form is filed by more than one reporting person, see Instruction 4 (b)(v).

\*\* Intentional misstatements or omissions of facts constitute Federal Criminal Violations See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB Number.