

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

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

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 IV General Partner LLC</u> (Last) (First) (Middle) 55 CAMBRIDGE PARKWAY, SUITE 800E (Street) CAMBRIDGE MA 02142 (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) 03/04/2019	
	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								42,865	I	See Footnote ⁽¹⁾
Common Stock								42,865	I	See Footnote ⁽²⁾
Common Stock								1,649,999	I	See Footnote ⁽³⁾
Common Stock	03/04/2019		C		665,908	A	(4)	665,908	I	See Footnote ⁽⁵⁾
Common Stock	03/04/2019		C		173,586	A	(6)	216,451	I	See Footnote ⁽¹⁾
Common Stock	03/04/2019		C		281,203	A	(6)	947,111	I	See Footnote ⁽⁵⁾

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
Series A Preferred Stock	(4)	03/04/2019		C			1,331,816	(4)	(4)	Common Stock	665,908	(4)	0	I	See Footnote ⁽⁵⁾
Series A-1 Preferred Stock	(6)	03/04/2019		C			347,173	(6)	(6)	Common Stock	173,586	(6)	0	I	See Footnote ⁽¹⁾
Series A-1 Preferred Stock	(6)	03/04/2019		C			562,407	(6)	(6)	Common Stock	281,203	(6)	0	I	See Footnote ⁽⁵⁾

1. Name and Address of Reporting Person*

[Flagship Ventures Fund IV 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 IV, 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 IV, 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 2007 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 2007, L.P.](#)

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

(Street)
CAMBRIDGE MA 02142

(City) (State) (Zip)

1. Name and Address of Reporting Person*		
Cadena 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)		
1. Name and Address of Reporting Person*		
KANIA EDWIN M JR		
(Last)	(First)	(Middle)
55 CAMBRIDGE PARKWAY, SUITE 800E		
(Street)		
CAMBRIDGE	MA	02142
(City) (State) (Zip)		

Explanation of Responses:

- Shares held by Flagship Ventures Fund 2007, L.P. ("Flagship 2007"). Flagship Ventures 2007 General Partner LLC ("Flagship 2007 GP") is the general partner of Flagship 2007. Noubar B. Afeyan, Ph.D. and Edwin M. Kania, Jr. are the managers of Flagship 2007 LLC. While Mr. Kania is retired from Flagship Pioneering, Inc., he continues to serve as a manager of Flagship 2007 GP. Each of these individuals and entities may be deemed to share voting and investment power with respect to all shares held by Flagship 2007. Each of the reporting persons disclaims beneficial ownership of the shares except to the extent of his or its pecuniary interest therein.
- Shares held by Flagship VentureLabs IV, LLC ("VentureLabs IV"). Flagship Ventures Fund IV, L.P. ("Flagship Fund IV") is a member of VentureLabs IV and also serves as its manager. Flagship Ventures Fund IV General Partner LLC ("Flagship Fund IV GP") is the general partner of Flagship Fund IV. Noubar B. Afeyan, Ph.D. and Edwin M. Kania, Jr. are the managers of Flagship Fund IV GP. While Mr. Kania is retired from Flagship Pioneering, Inc., he continues to serve as a manager of Flagship Fund IV GP. Each of these individuals and entities may be deemed to share voting and investment power with respect to all shares held by VentureLabs IV. Each of the filing persons disclaims beneficial ownership of the shares except to the extent of his or its pecuniary interest therein.
- Shares held by Cadena LLC ("Cadena"). Noubar B. Afeyan, Ph.D. is the sole manager of Cadena, and may be deemed to possess sole voting and investment power with respect to all shares held by Cadena. Each of the reporting persons disclaims beneficial ownership of the shares except to the extent of his or its pecuniary interest therein.
- 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.
- Shares held by Flagship Ventures Fund IV, L.P. Flagship Fund IV GP is the general partner of Flagship Fund IV. Noubar B. Afeyan, Ph.D. and Edwin M. Kania, Jr. are the managers of Flagship Fund IV GP. While Mr. Kania is retired from Flagship Pioneering, Inc., he continues to serve as a manager of Flagship Fund IV GP. Each of these individuals and entities may be deemed to share voting and investment power with respect to all shares held by Flagship Fund IV. Each of the filing persons disclaims beneficial ownership of the shares except to the extent of his or its pecuniary interest therein.
- 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.

Remarks:

Due to limitations of the electronic filing system, each of Flagship Ventures Fund V General Partner LLC, Flagship Ventures Fund V, L.P., Flagship VentureLabs V LLC, Flagship VentureLabs V Manager LLC, Flagship Pioneering, Inc., Nutritional Health Disruptive Innovation Fund, L.P., Nutritional Health Side Fund, L.P., Flagship Ventures Opportunities Fund I, L.P., Flagship Ventures Opportunities Fund I General Partner LLC and Noubar B. Afeyan, Ph.D. are filing a separate Form 4 with respect to securities of the Issuer.

[Flagship Ventures Fund IV
General Partner LLC, By: /s/
Noubar B. Afeyan, Name: 03/06/2019
Noubar B. Afeyan, Ph.D.,
Title: Manager](#)

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

Flagship VentureLabs IV LLC,
By: Flagship Ventures Fund
IV, L.P., its manager, By:
Flagship Ventures Fund IV 03/06/2019
General Partner LLC, its
general partner, By: /s/ Noubar
B. Afeyan, Name: Noubar B.
Afeyan, Ph.D., Title: Manager
Flagship Ventures 2007
General Partner LLC, By: /s/
Noubar B. Afeyan, Name: 03/06/2019
Noubar B. Afeyan, Ph.D.,
Title: Manager
Flagship Ventures Fund 2007,
L.P., By: Flagship Ventures
2007 General Partner LLC, its 03/06/2019
general partner, By: /s/ Noubar
B. Afeyan, Name: Noubar B.
Afeyan, Ph.D., Title: Manager
Cadena LLC, By: /s/ Noubar
B. Afeyan, Name: Noubar B. 03/06/2019
Afeyan, Ph.D., Title: Manager
Noubar B. Afeyan, Ph.D., By: 03/06/2019
/s/ Noubar B. Afeyan
Edwin M. Kania, Jr., By: /s/ 03/06/2019
Edwin M. Kania, Jr.

** 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.