

OMB APPROVAL	
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INITIAL STATEMENT OF BENEFICIAL OWNERSHIP OF SECURITIES

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. Date of Event Requiring Statement (Month/Day/Year) 02/27/2019	3. Issuer Name and Ticker or Trading Symbol <u>Kaleido Biosciences, Inc. [KLDO]</u>	
		4. 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)	5. If Amendment, Date of Original Filed (Month/Day/Year) 6. Individual or Joint/Group Filing (Check Applicable Line) <input type="checkbox"/> Form filed by One Reporting Person <input checked="" type="checkbox"/> Form filed by More than One Reporting Person

Table I - Non-Derivative Securities Beneficially Owned

1. Title of Security (Instr. 4)	2. Amount of Securities Beneficially Owned (Instr. 4)	3. Ownership Form: Direct (D) or Indirect (I) (Instr. 5)	4. Nature of Indirect Beneficial Ownership (Instr. 5)
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⁾

Table II - Derivative Securities Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security (Instr. 4)	2. Date Exercisable and Expiration Date (Month/Day/Year)		3. Title and Amount of Securities Underlying Derivative Security (Instr. 4)		4. Conversion or Exercise Price of Derivative Security	5. Ownership Form: Direct (D) or Indirect (I) (Instr. 5)	6. Nature of Indirect Beneficial Ownership (Instr. 5)
	Date Exercisable	Expiration Date	Title	Amount or Number of Shares			
Series A Preferred Stock	(4)	(4)	Common Stock	665,908	(4)	I	See Footnote ⁽⁵⁾
Series A-1 Preferred Stock	(6)	(6)	Common Stock	173,586	(6)	I	See Footnote ⁽¹⁾
Series A-1 Preferred Stock	(6)	(6)	Common Stock	281,203	(6)	I	See Footnote ⁽⁵⁾

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)		
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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 GP. 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 is convertible into shares of the Issuer's common stock, \$0.001 par value per share ("Common Stock") on a one-for-two basis. Upon the closing of the Issuer's initial public offering, all shares of Series A Preferred Stock will convert into shares of Common Stock of the Issuer. The Series A Preferred Stock has no expiration date.
- Shares held by Flagship Fund IV. 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 reporting persons disclaims beneficial ownership of such shares except to the extent of his or its pecuniary interest therein.
- Each share of Series A-1 Preferred Stock is convertible into shares of the Issuer's Common Stock on a one-for-two basis. Upon the closing of the Issuer's initial public offering, all shares of Series A-1 Preferred Stock will convert into shares of Common Stock of the Issuer. The Series A-1 Preferred Stock has no expiration date.

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 3 with respect to securities of the Issuer.

[Flagship Ventures Fund IV](#)
[General Partner LLC By: /s/](#)
[Noubar B. Afeyan Name:](#) 02/27/2019
[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/](#) 02/27/2019
[Noubar B. Afeyan Name:](#)
[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](#) 02/27/2019
[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:](#)
[Noubar B. Afeyan Name:](#) 02/27/2019
[Noubar B. Afeyan, Ph.D. Title:](#)
[Manager](#)

Flagship Ventures Fund 2007,
L.P., By: Flagship Ventures
2007 General Partner LLC, its
general partner By: /s/ Noubar
B. Afeyan Name: Noubar B.
Afeyan, Ph.D. Title: Manager
02/27/2019
Cadena LLC By: /s/ Noubar B.
Afeyan Name: Noubar B. 02/27/2019
Afeyan, Ph.D. Title: Manager
/s/ Noubar B. Afeyan, Ph.D. 02/27/2019
/s/ Edwin M. Kania, Jr. 02/27/2019
** 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 5 (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.