
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

SCHEDULE 13D

**Under the Securities Exchange Act of 1934
(Amendment No. 2)**

INOZYME PHARMA, INC.

(Name of Issuer)

Common Stock, \$0.0001 par value per share
(Title of Class of Securities)

45790W 108
(CUSIP Number)

Patrick G. Enright
Managing Member
Longitude Capital Partners III, LLC
2740 Sand Hill Road, 2nd Floor
Menlo Park, CA 94025
(650) 854-5700

(Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications)

August 1, 2023
(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 .

* 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).

(Continued on following pages)

1	NAMES OF REPORTING PERSONS Longitude Capital Partners III, LLC	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (see instructions) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (see instructions) AF	
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) or 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 4,174,379 (1)
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 4,174,379 (1)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 4,174,379 (1)	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (see instructions) <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 11 7.1% (2)	
14	TYPE OF REPORTING PERSON (see instructions) OO	

- (1) All such shares are held of record by LVPIII (as defined in Item 2(a) below). LCPIII (as defined in Item 2(a) below) is the general partner of LVPIII and may be deemed to have voting, investment and dispositive power with respect to these securities. Patrick G. Enright and Juliet Tammenoms Bakker, are the managing members of LCPIII and may each be deemed to share voting, investment and dispositive power with respect to these securities.
- (2) Based on 58,879,088 shares of Common Stock outstanding (assuming the underwriters do not exercise in full the option to purchase additional shares), as reported by the Issuer in its final prospectus dated July 28, 2023 and filed with the Securities and Exchange Commission (the "Commission") on July 28, 2023 pursuant to Rule 424(b)(5) under the Securities Act of 1933, as amended (the "Prospectus").

1	NAMES OF REPORTING PERSONS Longitude Venture Partners III, L.P.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (see instructions) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (see instructions) WC	
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) or 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 4,174,379 (1)
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 4,174,379 (1)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 4,174,379 (1)	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (see instructions) <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 11 7.1% (2)	
14	TYPE OF REPORTING PERSON (see instructions) PN	

- (1) All such shares are held of record by LVPIII. LCPIII is the general partner of LVPIII and may be deemed to have voting, investment and dispositive power with respect to these securities. Patrick G. Enright and Juliet Tammenoms Bakker are the managing members of LCPIII and may each be deemed to share voting, investment and dispositive power with respect to these securities.
- (2) Based on 58,879,088 shares of Common Stock outstanding (assuming the underwriters do not exercise in full the option to purchase additional shares), as reported by the Issuer in the Prospectus.

1	NAMES OF REPORTING PERSONS Longitude Prime Partners, LLC	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (see instructions) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (see instructions) AF	
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) or 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 1,666,666 (1)
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 1,666,666 (1)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,666,666 (1)	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (see instructions) <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 11 2.8% (2)	
14	TYPE OF REPORTING PERSON (see instructions) OO	

- (1) All such shares are held of record by LPP (as defined in Item 2(a) below). LPP (as defined in Item 2(a) below) is the general partner of LPF and may be deemed to have voting, investment and dispositive power with respect to these securities. Patrick G. Enright and Juliet Tammenoms Bakker are the managing members of LPP and may each be deemed to share voting, investment and dispositive power with respect to these securities.
- (2) Based on 58,879,088 shares of Common Stock outstanding (assuming the underwriters do not exercise in full the option to purchase additional shares), as reported by the Issuer in the Prospectus.

1	NAMES OF REPORTING PERSONS Longitude Prime Fund, L.P.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (see instructions) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (see instructions) WC	
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) or 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 1,666,666 (1)
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 1,666,666 (1)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,666,666 (1)	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (see instructions) <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 11 2.8% (2)	
14	TYPE OF REPORTING PERSON (see instructions) PN	

- (1) All such shares are held of record by LPF. LPP is the general partner of LPF and may be deemed to have voting, investment and dispositive power with respect to these securities. Patrick G. Enright and Juliet Tammenoms Bakker are the managing members of LPP and may each be deemed to share voting, investment and dispositive power with respect to these securities.
- (2) Based on 58,879,088 shares of Common Stock outstanding (assuming the underwriters do not exercise in full the option to purchase additional shares), as reported by the Issuer in the Prospectus.

1	NAMES OF REPORTING PERSONS Patrick G. Enright	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (see instructions) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (see instructions) AF	
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) or 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION United States of America	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 5,841,045 (1)
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 5,841,045 (1)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 5,841,045 (1)	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (see instructions) <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 11 9.9% (2)	
14	TYPE OF REPORTING PERSON (see instructions) IN	

- (1) Consists of (i) 4,174,379 shares held of record by LVPIII and (ii) 1,666,666 shares held of record by LPF. LCPIII is the general partner of LVPIII and may be deemed to have voting, investment and dispositive power with respect to these securities. LPP is the general partner of LPF and may be deemed to have voting, investment and dispositive power with respect to the securities held by LPF. Patrick G. Enright and Juliet Tammenoms Bakker are the managing members of each of LCPIII and LPP and may each be deemed to share voting, investment and dispositive power with respect to these securities.
- (2) Based on 58,879,088 shares of Common Stock outstanding (assuming the underwriters do not exercise in full the option to purchase additional shares), as reported by the Issuer in the Prospectus.

1	NAMES OF REPORTING PERSONS Juliet Tammenoms Bakker	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (see instructions) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (see instructions) AF	
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) or 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION United States of America	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 5,841,045 (1)
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 5,841,045 (1)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 5,841,045 (1)	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (see instructions) <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 11 9.9% (2)	
14	TYPE OF REPORTING PERSON (see instructions) IN	

(1) Consists of (i) 4,174,379 shares held of record by LVPIII and (ii) 1,666,666 shares held of record by LPF. LCPIII is the general partner of LVPIII and may be deemed to have voting, investment and dispositive power with respect to these securities. LPP is the general partner of LPF and may be deemed to have voting, investment and dispositive power with respect to the securities held by LPF. Patrick G. Enright and Juliet Tammenoms Bakker are the managing members of each of LCPIII and LPP and may each be deemed to share voting, investment and dispositive power with respect to these securities.

(2) Based on 58,879,088 shares of Common Stock outstanding (assuming the underwriters do not exercise in full the option to purchase additional shares), as reported by the Issuer in the Prospectus.

Item 1. Security and Issuer.

This joint statement on Schedule 13D/A (this “Statement”) is filed with respect to the common stock, par value \$0.0001 per share (“Common Stock”), of Inozyme Pharma, Inc., a Delaware corporation (the “Issuer”). The address of the principal executive offices of the Issuer is 321 Summer Street, Suite 400, Boston, Massachusetts 02210.

Item 2. Identity and Background.

- (a) This Amendment No. 2 (“Amendment”) amends and supplements the Schedule 13D originally filed with the Commission on August 7, 2020 and Amendment No. 1 thereto filed with the Commission on April 28, 2022 (the “Original Schedule 13D”). This Statement is being filed by Longitude Venture Partners III, L.P. (“LVPIII”), Longitude Capital Partners III, LLC (“LCPIII”), Longitude Prime Partners, LLC (“LPP”) and Longitude Prime Fund, L.P. (“LPF” and together with LCPIII, LVPIII and LPP, the “Reporting Entities”) and Patrick G. Enright (“Enright”) and Juliet Tammenoms Bakker (“Tammenoms Bakker” and together with Enright, the “Managing Members”). The Reporting Entities and the Managing Members are collectively referred to as the “Reporting Persons.” The agreement among the Reporting Persons to file jointly in accordance with the provisions of Rule 13d-1(k)(1) under the Act is attached to this Statement as Exhibit 4. Each Reporting Person disclaims beneficial ownership of all securities reported in this Statement except to the extent of such Reporting Person’s pecuniary interest therein, other than those securities reported herein as being held directly by such Reporting Person. Only those items that are hereby reported are amended; all other items reported in the Original Schedule 13D remain unchanged. Information given in response to each item shall be deemed incorporated by reference in all other items, as applicable. Capitalized terms not defined in this Amendment have the meanings ascribed to them in the Original Schedule 13D.
- (b) The address of the principal offices of each Reporting Entity and the business address of each Managing Member is 2740 Sand Hill Road, Second Floor, Menlo Park, California 94025.
- (c) Each Reporting Entity is a venture capital investment entity. Each Managing Member is engaged through venture capital investment entities in acquiring, holding and disposing of interests in various companies for investment purposes. The Managing Members are managing members of each of LCPIII, the general partner of LVPIII, and LPP, the general partner of LPF.
- (d) During the past five years, none of the Reporting Persons have been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors).
- (e) None of the Reporting Persons are, nor during the last five years have been, a party to a civil proceeding of a judicial or administrative body of competent jurisdiction and as a result of such proceeding was or is subject to a judgment, decree or final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violation with respect to such laws.
- (f) LCPIII and LPP are each a limited liability company organized under the laws of the State of Delaware. LVPIII and LPF are each a limited partnership organized under the laws of the State of Delaware. Each of the Managing Members is a citizen of the United States of America.

Item 3. Source and Amount of Funds or Other Consideration.

Item 3 of the Original Schedule 13D is hereby amended to add the following language:

On August 1, 2023, the Issuer completed a public offering pursuant to which among other things, the Issuer issued and sold 12,500,000 shares of Common Stock at a price to the public of \$4.80 per share (the “Follow-on Offering”). In addition, the Issuer granted the underwriters an option to purchase, at the public offering price less any underwriting discounts and commissions, up to an additional 1,875,000 shares of Common Stock.

In the Follow-on Offering, LPF purchased 1,666,666 shares of Common Stock for a purchase price of \$4.80 per share and an aggregate purchase price of \$7,999,996.80 (the "Follow-on Purchase"). Following the Follow-on Purchase, LVPIII directly held an aggregate of 4,174,379 shares of Common Stock and LPF directly held an aggregate of 1,666,666 shares of Common Stock.

All shares of the capital stock of the Issuer purchased by each LVPIII and LPF have been purchased using investment funds provided to LVPIII and LPF by its limited partner and general partner investors. Unless noted above, no part of the purchase price was borrowed by any Reporting Person for the purpose of acquiring any securities discussed in this Item 3.

Item 5. Interest in Securities of the Issuer.

(a) and (b) See Items 7-11 of the cover pages of this Statement and Item 2 above.

(c) Except as reported in this Statement, none of the Reporting Persons has effected any transactions in the Issuer's securities within the past 60 days.

(d) Under certain circumstances set forth in the limited partnership agreement of LVPIII and LPF, the general partner and limited partners of LVPIII and LPF may be deemed to have the right to receive dividends from, or the proceeds from, the sale of shares of the Issuer owned by such entity of which they are a partner.

(e) Not applicable.

Item 7. Material to be Filed as Exhibits.

Item 7 of the Original Schedule 13D is hereby amended to add the following language:

Exhibit 4: Joint Filing Agreement, dated August 11, 2023, by and among the Reporting Persons (filed herewith).

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.

Dated: August 11, 2023

LONGITUDE VENTURE PARTNERS III, L.P.

By: LONGITUDE CAPITAL PARTNERS III, LLC
Its: General Partner

By: /s/ Cristiana Blauth Oliveira
Cristiana Blauth Oliveira, Authorized Signatory

LONGITUDE CAPITAL PARTNERS III, LLC

By: /s/ Cristiana Blauth Oliveira
Cristiana Blauth Oliveira, Authorized Signatory

LONGITUDE PRIME PARTNERS, LLC

By: /s/ Cristiana Blauth Oliveira
Cristiana Blauth Oliveira
Its: Authorized Signatory

LONGITUDE PRIME FUND, L.P.

By: Longitude Prime Partners, LLC
Its: General Partner

By: /s/ Cristiana Blauth Oliveira
Cristiana Blauth Oliveira
Its: Authorized Signatory

/s/ Cristiana Blauth Oliveira, as attorney in-fact for Patrick
G. Enright
Patrick G. Enright

/s/ Cristiana Blauth Oliveira, as attorney in-fact for Juliet
Tammenoms Bakker
Juliet Tammenoms Bakker

JOINT FILING AGREEMENT

The undersigned hereby agree that the foregoing statement on Schedule 13D is filed on behalf of each of the undersigned, and any amendments thereto executed by the undersigned shall be filed on behalf of each of the undersigned without the necessity of filing any additional joint filing agreement. The undersigned acknowledge that each is responsible for the timely filing of such statement on Schedule 13D and any amendments thereto, and for the completeness and accuracy of the information concerning him, her or it contained therein, but shall not be responsible for the completeness or accuracy of the information concerning the others of the undersigned, except to the extent that it knows or has reason to believe that such information is inaccurate or incomplete. This Joint Filing Agreement may be executed in any number of counterparts, all of which taken together shall constitute one and the same instrument.

Dated: August 11, 2023.

LONGITUDE VENTURE PARTNERS III, L.P.

By: LONGITUDE CAPITAL PARTNERS III, LLC
Its: General Partner

By: /s/ Cristiana Blauth Oliveira
Cristiana Blauth Oliveira, Authorized Signatory

LONGITUDE CAPITAL PARTNERS III, LLC

By: /s/ Cristiana Blauth Oliveira
Cristiana Blauth Oliveira, Authorized Signatory

LONGITUDE PRIME PARTNERS, LLC

By: /s/ Cristiana Blauth Oliveira
Cristiana Blauth Oliveira
Its: Authorized Signatory

LONGITUDE PRIME FUND, L.P.

By: Longitude Prime Partners, LLC
Its: General Partner

By: /s/ Cristiana Blauth Oliveira
Cristiana Blauth Oliveira
Its: Authorized Signatory

/s/ Cristiana Blauth Oliveira, as attorney in-fact for Patrick
G. Enright
Patrick G. Enright

/s/ Cristiana Blauth Oliveira, as attorney in-fact for Juliet
Tammenoms Bakker
Juliet Tammenoms Bakker