
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

SCHEDULE 13D

Under the Securities Exchange Act of 1934

Comera Life Sciences Holdings, Inc.
(Name of Issuer)

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

20037C108
(CUSIP Number)

Charles Cherington
c/o Ara Partners
200 Berkeley Street, 26th Floor
Boston, MA 02116
(713) 817-5702

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

December 27, 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 Rule 13d-1(e), Rule 13d-1(f) or Rule 13d-1(g), check the following box.

Note: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See Rule 13d-7(b) for other parties to whom copies are to be sent.

* 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).

1	NAMES OF REPORTING PERSONS		
	Charles Cherington		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>		
3	SEC USE ONLY		
4	SOURCE OF FUNDS (SEE INSTRUCTIONS) PF		
5	CHECK BOX 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		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER	45,989,871 ⁽¹⁾
	8	SHARED VOTING POWER	0
	9	SOLE DISPOSITIVE POWER	45,989,871 ⁽¹⁾
	10	SHARED DISPOSITIVE POWER	0
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 45,989,871 ⁽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) 66.31% ⁽²⁾		
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IN		

(1) Consists of (a) (i) 5,813,650 shares of Common Stock of Comera Life Sciences Holdings, Inc. (the “Issuer”), (ii) warrants to purchase 25,785,382 shares of Common Stock that are immediately exercisable, (iii) warrants to purchase 2,200,488 shares of Common Stock exercisable within 60 days, and (iv) 10,325,454 shares of Common Stock issuable upon the conversion of the Issuer’s 12.0% Senior Secured Convertible Notes, each of which are held directly by Charles Cherington, (b) 1,268,761 shares of Common Stock held by Cherington Holdings LLC, (c) 95,328 shares of Common Stock held by Ashley S. Pettus 2012 Irrevocable Trust FBO Benjamin P. Cherington, (d) 95,327 shares of Common Stock held by Ashley S. Pettus 2012 Irrevocable Trust FBO Cyrus B. Cherington, (e) 95,328 shares of Common Stock held by Ashley S. Pettus 2012 Irrevocable Trust FBO Henry S. Cherington, and (f) 310,153 shares of Common Stock issuable upon the conversion of the Series A Convertible Perpetual Preferred Stock held by Comera SPV LLC, of which the Reporting Person is the general partner. The reporting person disclaims beneficial ownership of the securities held by Comera SPV LLC, except to the extent of his pecuniary interest therein.

(2) Calculated based on (i) 30,737,796 shares of Common Stock outstanding, as disclosed in the Quarterly Report on Form 10-Q filed with the SEC on November 9, 2023, (ii) (a) warrants to purchase 25,785,382 shares of Common Stock that are immediately exercisable, (b) warrants to purchase 2,200,488 shares of Common Stock exercisable within 60 days, and (c) 10,325,454 shares of Common Stock issuable upon the conversion of the Issuer’s 12.0% Senior Secured Convertible Notes, each of which are held directly by Charles Cherington, and (iii) 310,153 shares of Common Stock issuable upon the conversion of the Series A Convertible Perpetual Preferred Stock held by Comera SPV LLC.

1	NAMES OF REPORTING PERSONS John D. Halpern		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>		
3	SEC USE ONLY		
4	SOURCE OF FUNDS (SEE INSTRUCTIONS) PF		
5	CHECK BOX 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		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0	
	8	SHARED VOTING POWER 3,298,168 ⁽¹⁾	
	9	SOLE DISPOSITIVE POWER	
	10	SHARED DISPOSITIVE POWER 3,298,168 ⁽¹⁾	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 3,298,168 ⁽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) 9.99% ⁽²⁾		
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IN		

(1) Represents shares held by the John D. Halpern Revocable Trust, a trust of which John Halpern and Katherine H. Halpern are trustees. Consists of (i) 1,008,168 shares of Common Stock of the Issuer, and (ii) 2,290,000 shares of Common Stock issuable upon the exercise of warrants to purchase shares of Common Stock and/or conversion of the Issuer's 12.0% Senior Secured Convertible Notes, both of which are held directly by John D. Halpern Revocable Trust. The warrants and notes held by the John D. Halpern Revocable Trust have beneficial ownership limitations such that shares may not be issued upon exercise of the warrants or conversion of the notes, if the beneficial ownership following the issuance would be greater than 9.99%. Shares that would exceed the beneficial ownership limitation are excluded from the number of shares beneficially owned by the reporting person.

(2) Calculated based on (i) 30,737,796 shares of Common Stock outstanding, as disclosed in the Quarterly Report on Form 10-Q filed with the SEC on November 9, 2023, and (ii) 2,290,000 shares of Common Stock issuable upon the exercise of warrants to purchase shares of Common Stock and/or conversion of the Issuer's 12.0% Senior Secured Convertible Notes.

1	NAMES OF REPORTING PERSONS Katherine H. Halpern		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>		
3	SEC USE ONLY		
4	SOURCE OF FUNDS (SEE INSTRUCTIONS) PF		
5	CHECK BOX 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		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0	
	8	SHARED VOTING POWER 3,298,168 ⁽¹⁾	
	9	SOLE DISPOSITIVE POWER	
	10	SHARED DISPOSITIVE POWER 3,298,168	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 3,298,168		
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) 9.99% ⁽²⁾		
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IN		

- (1) Represents shares held by the John D. Halpern Revocable Trust, a trust of which John Halpern and Katherine H. Halpern are trustees. Consists of (i) 1,008,168 shares of Common Stock of the Issuer, and (ii) 2,290,000 shares of Common Stock issuable upon the exercise of warrants to purchase shares of Common Stock and/or conversion of the Issuer's 12.0% Senior Secured Convertible Notes, both of which are held directly by John D. Halpern Revocable Trust. The warrants and notes held by the John D. Halpern Revocable Trust have beneficial ownership limitations such that shares may not be issued upon exercise of the warrants or conversion of the notes, if the beneficial ownership following the issuance would be greater than 9.99%. Shares that would exceed the beneficial ownership limitation are excluded from the number of shares beneficially owned by the reporting person.
- (2) Calculated based on (i) 30,737,796 shares of Common Stock outstanding, as disclosed in the Quarterly Report on Form 10-Q filed with the SEC on November 9, 2023, and (ii) 2,290,000 shares of Common Stock issuable upon the exercise of warrants to purchase shares of Common Stock and/or conversion of the Issuer's 12.0% Senior Secured Convertible Notes.

1	NAMES OF REPORTING PERSONS		
	Tucker R. Halpern		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>		
3	SEC USE ONLY		
4	SOURCE OF FUNDS (SEE INSTRUCTIONS) PF		
5	CHECK BOX 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		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 1,606,698 ⁽¹⁾	
	8	SHARED VOTING POWER 0	
	9	SOLE DISPOSITIVE POWER 1,606,698 ⁽¹⁾	
	10	SHARED DISPOSITIVE POWER 0	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,606,698 ⁽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) 4.99% ⁽²⁾		
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IN		

(1) Consists of (a) 146,698 shares of Common Stock and (b) 1,460,000 shares of Common Stock issuable upon the exercise of warrants to purchase Common Stock and/or conversion of the Issuer's Senior Secured Convertible Notes. The warrants and notes held by Tucker R. Halpern are held through the Tucker R. Halpern 2020 Trust and have beneficial ownership limitations such that shares may not be issued upon exercise of the warrants or conversion of the notes, if the beneficial ownership following the issuance would be greater than 4.99%. Shares that would exceed the beneficial ownership limitation are excluded from the number of shares beneficially owned by the reporting person.

(2) Calculated based on (a) 30,737,796 shares of Common Stock outstanding, as disclosed in the Quarterly Report on Form 10-Q filed with the SEC on November 9, 2023 and (b) 1,460,000 shares of Common Stock issuable upon the exercise of warrants to purchase Common Stock and/or conversion of the Issuer's Senior Secured Convertible Notes.

1	NAMES OF REPORTING PERSONS Warren Street Legacy, LLC		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>		
3	SEC USE ONLY		
4	SOURCE OF FUNDS (SEE INSTRUCTIONS) OF		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(D) OR 2(E) <input type="checkbox"/>		
6	CITIZENSHIP OR PLACE OF ORGANIZATION New York		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 1,605,598 ⁽¹⁾	
	8	SHARED VOTING POWER 0	
	9	SOLE DISPOSITIVE POWER 1,605,598 ⁽¹⁾	
	10	SHARED DISPOSITIVE POWER 0	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,605,598 ⁽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) 4.99% ⁽²⁾		
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) OO		

(1) Consists of (a) 195,598 shares of Common Stock and (b) 1,410,000 shares of Common Stock issuable upon the exercise of warrants to purchase Common Stock and/or conversion of the Issuer's Senior Secured Convertible Notes. The warrants and notes held by WSL have beneficial ownership limitations such that shares may not be issued upon exercise of the warrants or conversion of the notes, if the beneficial ownership following the issuance would be greater than 4.99%. Shares that would exceed the beneficial ownership limitation are excluded from the number of shares beneficially owned by the reporting person.

(2) Calculated based on (a) 30,737,796 shares of Common Stock outstanding, as disclosed in the Quarterly Report on Form 10-Q filed with the SEC on November 9, 2023 and (b) 1,410,000 shares of Common Stock issuable upon the exercise of warrants to purchase Common Stock and/or conversion of the Issuer's Senior Secured Convertible Notes.

1	NAMES OF REPORTING PERSONS		
	George P. Denny III		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>		
3	SEC USE ONLY		
4	SOURCE OF FUNDS (SEE INSTRUCTIONS) PF		
5	CHECK BOX 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		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 1,564,049 ⁽¹⁾	
	8	SHARED VOTING POWER 0	
	9	SOLE DISPOSITIVE POWER 1,564,049 ⁽¹⁾	
	10	SHARED DISPOSITIVE POWER 0	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,564,049 ⁽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) 4.99% ⁽²⁾		
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IN		

(1) Consists of (i) 969,049 shares of Common Stock of the Issuer held by Denny Family Partners II, LLC, whose managing member is George P. Denny III, and (ii) 595,000 shares of Common Stock issuable to Denny Family Partners II, LLC upon the exercise of warrants to purchase shares of Common Stock and/or the conversion of the Issuer's Senior Secured Convertible Notes, exercisable within 60 days, each of which are held directly by Denny Family Partners II, LLC. The warrants and notes held by the Denny Family Partners II, LLC have beneficial ownership limitations such that shares may not be issued upon exercise of the warrants or conversion of the notes, if the beneficial ownership following the issuance would be greater than 4.99%. Shares that would exceed the beneficial ownership limitation are excluded from the number of shares beneficially owned by the reporting person.

(2) Calculated based on (i) 30,737,796 shares of Common Stock outstanding, as disclosed in the Quarterly Report on Form 10-Q filed with the SEC on November 9, 2023, and (ii) 595,000 shares of Common Stock issuable upon the exercise of warrants to purchase shares of Common Stock and/or the conversion of the Issuer's Senior Secured Convertible Notes.

1	NAMES OF REPORTING PERSONS		
	Freebird Partners LP		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>		
3	SEC USE ONLY		
4	SOURCE OF FUNDS (SEE INSTRUCTIONS)		
	WC		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(D) OR 2(E)		
	<input type="checkbox"/>		
6	CITIZENSHIP OR PLACE OF ORGANIZATION		
	Texas		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER	
		0	
	8	SHARED VOTING POWER	
		3,709,509 ⁽¹⁾	
	9	SOLE DISPOSITIVE POWER	
		0	
	10	SHARED DISPOSITIVE POWER	
		3,709,509 ⁽¹⁾	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON		
	3,709,509 ⁽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)		
	11.2% ⁽²⁾		
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)		
	PN		

- (1) Includes (i) 1,254,776 shares of Common Stock, of which 40,325 shares of Common Stock (the “Earn-out Shares”) were issued to Freebird Partners LP, a Texas limited partnership (“Freebird Partners”) pursuant to that certain Business Combination Agreement dated January 31, 2022 (the “Business Combination Agreement”), by and among OTR Acquisition Corp., the Issuer, CLS Sub Merger 1 Corp., CLS Sub Merger 2 Corp., and Comera Life Sciences Inc., and are currently held in escrow until the occurrence of certain events, as described in the Business Combination Agreement, filed as Exhibit 2.1 to the Issuer’s Prospectus Supplement No. 1 to Form S-1 filed with the SEC on August 15, 2022, and (ii) 2,454,733 shares issuable upon the exercise of warrants to purchase Common Stock exercisable or convertible within 60 days, directly beneficially owned by Freebird Partners. Freebird Investments LLC, a Texas limited liability company (“Freebird Investments”), serves as the general partner of Freebird Partners. Curtis W. Huff is the sole member of Freebird Investments. By virtue of these relationships, each of Freebird Investments and Mr. Huff may be deemed to share beneficial ownership of the securities held of record by Freebird Partners. That certain Common Stock Purchase Warrant (the “December Freebird Warrant”) and the Issuer’s 12.0% Senior Secured Convertible Note (the “December Freebird Note”) issued to Freebird Partners on December 29, 2023 have beneficial ownership limitations such that shares may not be issued upon exercise of the December Freebird Warrant or conversion of the December Freebird Note, if the beneficial ownership following the issuance would be greater than 9.99%. Shares that would exceed the beneficial ownership limitation are excluded from the number of shares beneficially owned by the reporting person.

- (2) Calculated based on (a) 30,737,796 shares of Common Stock outstanding, as disclosed in the Quarterly Report on Form 10-Q filed with the SEC on November 9, 2023, and (b) 2,454,733 shares issuable upon the exercise of warrants to purchase Common Stock.

1	NAMES OF REPORTING PERSONS		
	Freebird Investments LLC		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>		
3	SEC USE ONLY		
4	SOURCE OF FUNDS (SEE INSTRUCTIONS)		
	WC		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(D) OR 2(E)		
	<input type="checkbox"/>		
6	CITIZENSHIP OR PLACE OF ORGANIZATION		
	Texas		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER	
		0	
	8	SHARED VOTING POWER	
		3,709,509 ⁽¹⁾	
	9	SOLE DISPOSITIVE POWER	
		0	
	10	SHARED DISPOSITIVE POWER	
		3,709,509 ⁽¹⁾	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON		
	3,709,509 ⁽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)		
	11.2% ⁽²⁾		
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)		
	OO		

(1) Includes (i) 1,254,776 shares of Common Stock, of which 40,325 are Earn-out Shares, which were issued to Freebird Partners pursuant to that certain Business Combination Agreement and are currently held in escrow until the occurrence of certain events, as described in the Business Combination Agreement, filed as Exhibit 2.1 to the Issuer's Prospectus Supplement No. 1 to Form S-1 filed with the SEC on August 15, 2022, and (ii) 2,454,733 shares issuable upon the exercise of warrants to purchase Common Stock exercisable or convertible within 60 days, directly beneficially owned by Freebird Partners. Freebird Investments serves as the general partner of Freebird Partners. Mr. Huff is the sole member of Freebird Investments. By virtue of these relationships, each of Freebird Investments and Mr. Huff may be deemed to share beneficial ownership of the securities held of record by Freebird Partners. The December Freebird Warrant and the December Freebird Note issued to Freebird Partners on December 29, 2023 have beneficial ownership limitations such that shares may not be issued upon exercise of the December Freebird Warrant or conversion of the December Freebird Note, if the beneficial ownership following the issuance would be greater than 9.99%. Shares that would exceed the beneficial ownership limitation are excluded from the number of shares beneficially owned by the reporting person.

(2) Calculated based on (a) 30,737,796 shares of Common Stock outstanding, as disclosed in the Quarterly Report on Form 10-Q filed with the SEC on November 9, 2023 and (b) 2,454,733 shares issuable upon the exercise of warrants to purchase Common Stock.

1	NAMES OF REPORTING PERSONS Curtis Huff		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>		
3	SEC USE ONLY		
4	SOURCE OF FUNDS (SEE INSTRUCTIONS) WC		
5	CHECK BOX 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		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER	0
	8	SHARED VOTING POWER	3,709,509 ⁽¹⁾
	9	SOLE DISPOSITIVE POWER	0
	10	SHARED DISPOSITIVE POWER	3,709,509 ⁽¹⁾
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 3,709,509 ⁽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) 11.2% ⁽²⁾		
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IN		

(1) Includes (i) 1,254,776 shares of Common Stock, of which 40,325 are Earn-out Shares, which were issued to Freebird Partners pursuant to that certain Business Combination Agreement and are currently held in escrow until the occurrence of certain events, as described in the Business Combination Agreement, filed as Exhibit 2.1 to the Issuer's Prospectus Supplement No. 1 to Form S-1 filed with the SEC on August 15, 2022, and (ii) 2,454,733 shares issuable upon the exercise of warrants to purchase Common Stock exercisable or convertible within 60 days, directly beneficially owned by Freebird Partners. Freebird Investments serves as the general partner of Freebird Partners. Mr. Huff is the sole member of Freebird Investments. By virtue of these relationships, each of Freebird Investments and Mr. Huff may be deemed to share beneficial ownership of the securities held of record by Freebird Partners. The December Freebird Warrant and the December Freebird Note issued to Freebird Partners on December 29, 2023 have beneficial ownership limitations such that shares may not be issued upon exercise of the December Freebird Warrant or conversion of the December Freebird Note, if the beneficial ownership following the issuance would be greater than 9.99%. Shares that would exceed the beneficial ownership limitation are excluded from the number of shares beneficially owned by the reporting person.

(2) Calculated based on (a) 30,737,796 shares of Common Stock outstanding, as disclosed in the Quarterly Report on Form 10-Q filed with the SEC on November 9, 2023 and (b) 2,454,733 shares issuable upon the exercise of warrants to purchase Common Stock.

1	NAMES OF REPORTING PERSONS Shameek Konar	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (SEE INSTRUCTIONS) PF	
5	CHECK BOX 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	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 1,561,064 ⁽¹⁾
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 1,561,064 ⁽¹⁾
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,561,064 ⁽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) 4.99% ⁽²⁾	
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IN	

- (1) Represents shares held by Regolith Capital Investments L.P., of which Shameek Konar and Victoria Konar are general partners. Consists of (i) 1,001,064 shares of Common Stock of the issuer, and (ii) 560,000 shares of Common Stock issuable upon the exercise of warrants to purchase shares of Common Stock and/or the conversion of the Issuer's 12.0% Senior Secured Convertible Notes, each of which are held directly by Regolith Capital Investments L.P. The warrants and notes held by Regolith Capital Investments L.P. have beneficial ownership limitations such that shares may not be issued upon exercise of the warrants or conversion of the notes, if the beneficial ownership following the issuance would be greater than 9.99%. Shares that would exceed the beneficial ownership limitation are excluded from the number of shares beneficially owned by the reporting person.
- (2) Calculated based on (i) 30,737,796 shares of Common Stock outstanding, as disclosed in the Quarterly Report on Form 10-Q filed with the SEC on November 9, 2023 and (ii) 560,000 shares of Common Stock issuable upon the exercise of warrants to purchase shares of Common Stock and/or the conversion of the Issuer's 12.0% Senior Secured Convertible Notes.

1	NAMES OF REPORTING PERSONS		
	Victoria Konar		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>		
3	SEC USE ONLY		
4	SOURCE OF FUNDS (SEE INSTRUCTIONS) PF		
5	CHECK BOX 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		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0	
	8	SHARED VOTING POWER 1,561,064 ⁽¹⁾	
	9	SOLE DISPOSITIVE POWER 0	
	10	SHARED DISPOSITIVE POWER 1,561,064 ⁽¹⁾	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,561,064 ⁽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) 4.99% ⁽²⁾		
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IN		

(1) Represents shares held by Regolith Capital Investments L.P., of which Shameek Konar and Victoria Konar are general partners. Consists of (i) 1,001,064 shares of Common Stock of the issuer, and (ii) 560,000 shares of Common Stock issuable upon the exercise of warrants to purchase shares of Common Stock and/or the conversion of the Issuer's 12.0% Senior Secured Convertible Notes, each of which are held directly by Regolith Capital Investments L.P. The warrants and notes held by Regolith Capital Investments L.P. have beneficial ownership limitations such that shares may not be issued upon exercise of the warrants or conversion of the notes, if the beneficial ownership following the issuance would be greater than 9.99%. Shares that would exceed the beneficial ownership limitation are excluded from the number of shares beneficially owned by the reporting person.

(2) Calculated based on (i) 30,737,796 shares of Common Stock outstanding, as disclosed in the Quarterly Report on Form 10-Q filed with the SEC on November 9, 2023 and (ii) 560,000 shares of Common Stock issuable upon the exercise of warrants to purchase shares of Common Stock and/or the conversion of the Issuer's 12.0% Senior Secured Convertible Notes.

1	NAMES OF REPORTING PERSONS		
	IAF, LLC		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>		
3	SEC USE ONLY		
4	SOURCE OF FUNDS (SEE INSTRUCTIONS)		
	PF		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(D) OR 2(E)		
	<input type="checkbox"/>		
6	CITIZENSHIP OR PLACE OF ORGANIZATION		
	South Carolina		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER	
		3,133,914 ⁽¹⁾	
	8	SHARED VOTING POWER	
		0	
	9	SOLE DISPOSITIVE POWER	
		3,133,914 ⁽¹⁾	
	10	SHARED DISPOSITIVE POWER	
		0	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON		
	3,133,914 ⁽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)		
	9.99% ⁽²⁾		
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)		
	OO		

(1) Consists of (a) 2,506,914 shares of Common Stock and (b) 627,000 shares of Common Stock issuable upon the exercise of warrants to purchase Common Stock and/or conversion of the Issuer's Senior Secured Convertible Notes held directly by IAF, LLC. The warrants and notes held by IAF, LLC have beneficial ownership limitations such that shares may not be issued upon exercise of the warrants or conversion of the notes, if the beneficial ownership following the issuance would be greater than 9.99%. Shares that would exceed the beneficial ownership limitation are excluded from the number of shares beneficially owned by the reporting person.

(2) Calculated based on (a) 30,737,796 shares of Common Stock outstanding, as disclosed in the Quarterly Report on Form 10-Q filed with the SEC on November 9, 2023 and (b) 627,000 shares of Common Stock issuable upon the exercise of warrants to purchase Common Stock and/or conversion of the Issuer's Senior Secured Convertible Notes held by IAF, LLC.

1	NAMES OF REPORTING PERSONS		
	Stephen E. Older		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>		
3	SEC USE ONLY		
4	SOURCE OF FUNDS (SEE INSTRUCTIONS)		
	PF		
5	CHECK BOX 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		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER	
		1,174,228 ⁽¹⁾	
	8	SHARED VOTING POWER	
		0	
	9	SOLE DISPOSITIVE POWER	
		1,174,228 ⁽¹⁾	
	10	SHARED DISPOSITIVE POWER	
		0	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON		
	1,174,228 ⁽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)		
	3.69% ⁽²⁾		
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)		
	IN		

(1) Consists of (a) 111,549 shares of Common Stock and (b) 1,062,679 shares of Common Stock issuable upon the exercise of warrants to purchase Common Stock and/or conversion of the Issuer's Senior Secured Convertible Notes held directly by Older.

(2) Calculated based on (a) 30,737,796 shares of Common Stock outstanding, as disclosed in the Quarterly Report on Form 10-Q filed with the SEC on November 9, 2023 and (b) 1,062,679 shares of Common Stock issuable upon the exercise of warrants to purchase Common Stock and/or conversion of the Issuer's Senior Secured Convertible Notes held by Older.

1	NAMES OF REPORTING PERSONS		
	David Soane		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>		
3	SEC USE ONLY		
4	SOURCE OF FUNDS (SEE INSTRUCTIONS) PF		
5	CHECK BOX 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		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER	10,588,520 ⁽¹⁾
	8	SHARED VOTING POWER	0
	9	SOLE DISPOSITIVE POWER	10,460,145 ⁽²⁾
	10	SHARED DISPOSITIVE POWER	0
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 10,588,520 ⁽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) 26.27% ⁽³⁾		
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IN		

(1) Consists of (a) 589,786 shares of Common Stock held directly by David Soane, which includes 119,779 Earn-Out Shares (as described below), (b) 284,328 shares held by the Alexander V. Soane 2019 Irrevocable Trust, which includes 4,298 Earn-Out Shares, (c) 284,328 shares held by the Nicholas V. Soane 2019 Irrevocable Trust, which includes 4,298 Earn-Out Shares, (d) 3,351,403 shares of Common Stock issuable upon the exercise of warrants that are exercisable within 60 days and held by the Alexander V. Soane 2019 Irrevocable Trust, (e) 3,351,403 shares of Common Stock issuable upon the exercise of warrants that are exercisable within 60 days and held by the Nicholas V. Soane 2019 Irrevocable Trust, (f) 1,363,636 shares issuable upon the conversion of the Issuer's 12.0% Senior Secured Convertible Notes held by the Alexander V. Soane 2019 Irrevocable Trust and (g) 1,363,636 shares issuable upon the conversion of the Issuer's 12.0% Senior Secured Convertible Notes held by the Nicholas V. Soane 2019 Irrevocable Trust.

(2) Excludes earn-out shares. See footnote 1. Earn-out Shares are shares of Common Stock held in escrow, which shares will be released if, at any time prior to May 19, 2024, either (i) the volume-weighted average price of the Common Stock is equal to or greater than \$12.50 for twenty trading days within a thirty trading day period or (ii) upon a change of control with aggregate consideration in excess of \$12.50 per share of Common Stock.

(3) Calculated based on (a) 30,737,796 shares of Common Stock outstanding, as disclosed in the Quarterly Report on Form 10-Q filed with the SEC on November 9, 2023, (b) warrants to purchase 6,837,940 shares of Common Stock held by the Soane Family Trust, Alexander V. Soane 2019 Irrevocable Trust and Nicholas V. Soane 2019 Irrevocable Trust (collectively, the "Soane Trusts") and (c) 2,727,272 shares issuable upon the conversion of the 12.0% Senior Secured Convertible Notes held by certain of the Soane Trusts.

1	NAMES OF REPORTING PERSONS		
	The Soane Family Trust		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>		
3	SEC USE ONLY		
4	SOURCE OF FUNDS (SEE INSTRUCTIONS) PF		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(D) OR 2(E) <input type="checkbox"/>		
6	CITIZENSHIP OR PLACE OF ORGANIZATION Florida		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 3,471,696 ⁽¹⁾	
	8	SHARED VOTING POWER 0	
	9	SOLE DISPOSITIVE POWER 2,808,408 ⁽²⁾	
	10	SHARED DISPOSITIVE POWER 0	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 3,471,696 ⁽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) 8.62% ⁽³⁾		
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) OO		

(1) Consists of (i) 3,336,562 shares of Common Stock held directly by The Soane Family Trust, which includes 663,288 Earn-Out Shares and (ii) 135,134 shares of Common Stock issuable upon the exercise of a warrant that is exercisable within 60 days.

(2) Excludes earn-out shares. See footnote 1.

(3) Calculated based on (a) 30,737,796 shares of Common Stock outstanding, as disclosed in the Quarterly Report on Form 10-Q filed with the SEC on November 9, 2023, (b) warrants to purchase 6,837,940 shares of Common Stock held by the Soane Trusts and (c) 2,727,272 shares issuable upon the conversion of the 12.0% Senior Secured Convertible Notes held by certain of the Soane Trusts.

Explanatory Statement

By virtue of the matters described herein, the Reporting Persons and certain other persons that are party to the transactions described below may be deemed to constitute a “group” for purposes of Rule 13(d)(3) of the Securities Exchange Act of 1934, as amended (the “Act”), as a result of the matters described in Item 4 below. The Reporting Persons are making this joint filing pursuant to Rule 13d-1(k)(1) under the Act, which filing constitutes the initial statement on Schedule 13D by the newly-formed group. The filing of this Schedule 13D shall not be construed as an admission that a Reporting Person beneficially owns those securities held by any other member of the group. Each Reporting Person expressly disclaims beneficial ownership of any common stock or warrants to purchase common stock of the Issuer held or that may be acquired by any other Reporting Person.

Item 1. Security and Issuer.

This Schedule 13D relates to the shares of common stock, par value \$0.0001 per share (the “Common Stock”), of Comera Life Sciences Holdings, Inc., a Delaware corporation (the “Issuer”). This Schedule 13D also relates to the shares of the Series A Convertible Preferred Stock, par value \$0.0001 per share (the “Preferred Stock”) of the Issuer. The principal executive offices of the Issuer are located at 12 Gill Street, Suite 4650, Woburn, Massachusetts 01801.

Item 2. Identity and Background.

(a)-(c) This Schedule 13D is being filed by Charles Cherington (“Cherington”), John D. Halpern, Katherine H. Halpern, Tucker R. Halpern, Warren Street Legacy, LLC (“WSL”), George P. Denny III, Freebird Partners LP, Freebird Investments LLC, Curtis Huff, Shameek Konar, Victoria Konar, IAF, LLC (“IAF”), Stephen E. Older, David Soane, and The Soane Family Trust (collectively, the “Reporting Persons” and each, a “Reporting Person”), pursuant to their agreement to the joint filing of this Schedule 13D, attached hereto as Exhibit 99.1.

Cherington is the managing partner of Ara Partners, a global private equity firm focused on industrial decarbonization investments. Cherington’s principal office is located at 200 Berkeley Street, 26th Floor, Boston, MA 02116.

John D. Halpern and Katherine H. Halpern are trustees of the John D. Halpern Revocable Trust (the “Halpern Trust”). Halpern Trust’s principal office is located at P.O. Box 540, Portsmouth, New Hampshire, 03802.

WSL is a limited liability company of which Ian H. Halpern is the managing member. WSL’s principal office is located at 410 Colon Avenue, San Francisco, California 94127.

Tucker R. Halpern is trustee of the Tucker R. Halpern 2020 Trust. The Tucker R. Halpern 2020 Trust’s principal office is located at 205 Monroe Avenue, West Palm Beach, Florida 33405.

George P. Denny III is the manager of Denny Family Partners II LLC, a limited liability company. Its mailing address is Post Office Box 423, Poland, Maine 04274.

Freebird Partners is a Texas limited partnership. Freebird Investments is a Texas limited liability company. Freebird Investments is the general partner of Freebird Partners, and as a result, may be deemed to share voting and dispositive power with respect to the securities held by Freebird Partners. Curtis Huff is the sole member of Freebird Investments, which is the general partner of Freebird Partners LP, and as a result, may be deemed to share voting and dispositive power with respect to the securities held by Freebird Partners. The principal office for each of Freebird Partners, Freebird Investments and Huff is located at 2800 Post Oak Blvd, Suite 2000, Houston, Texas 77056.

Shameek Konar and Victoria Konar are general partners of Regolith Capital Investments L.P. Regolith Capital Investments L.P. was formed under the laws of the State of Texas. Its principal business is investing capital and its principal office is located at 10608 Stoppard View Way, Knoxville, TN 37922.

IAF is a limited liability company formed under the laws of the State of South Carolina. Its principal business and principal office is located at 115 Church Street, Charleston, South Carolina 29401.

Stephen Older is an attorney at McGuireWoods LLP. His principal office is located at 1251 Avenue of the Americas 20th Floor New York, NY 10020.

The principal office of David Soane and The Soane Family Trust is located at 380 NE 72nd Terrace, Miami, FL 33138. The Soane Family Trust is administered under the laws of the State of Florida.

(d)-(e) Each Reporting Person confirms that during the last five years, such Reporting Person (i) has not been convicted in any criminal proceeding (excluding traffic violations or similar misdemeanors), and (ii) was not 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) Each of Cherington, John D. Halpern, Katherine H. Halpern, Tucker R. Halpern, George P. Denny III, Curtis Huff, Shameek Konar, Victoria Konar, Stephen Older, and David Soane is a citizen of the United States.

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

Certain of the Reporting Persons acquired the shares of Common Stock from the Issuer in various transactions, including the OTR Merger (as defined below) and one or more private placement transactions, including those described below, all as previously disclosed. On May 19, 2022, the Issuer consummated the acquisition of all of the issued and outstanding shares of OTR Acquisition Corp., a Delaware corporation ("OTR") and Comera Life Sciences, Inc., a Delaware corporation ("Comera"), in accordance with that certain Business Combination Agreement (as amended, the "Business Combination Agreement") by and among the Issuer, OTR, Comera, CLS Sub Merger 1 Corp., a Delaware corporation ("Comera Merger Sub"), and CLS Sub Merger 2 Corp., a Delaware corporation ("OTR Merger Sub"). As contemplated in the Business Combination Agreement, (i) Comera Merger Sub merged with and into Comera, with Comera surviving such merger as a direct wholly-owned subsidiary of the Issuer (the "Comera Merger") and (ii) OTR Merger Sub merged with and into OTR, with OTR surviving such merger as a direct wholly-owned subsidiary of the Issuer (the "OTR Merger") (collectively with the other transactions described in the Business Combination Agreement, the "Business Combination"). Upon the closing of the Business Combination, by virtue of the Comera Merger, all shares of Comera common stock, par value \$0.001 per share ("Comera Common Stock"), issued and outstanding were canceled and converted into the right to receive shares of the Issuer's Common Stock. Certain of the Reporting Persons were former holders of Comera Common Stock, and immediately after the closing of, and giving effect to the Business Combination and issuance of Common Stock in connection therewith, became the beneficial owner of Common Stock.

On January 2, 2023, the Issuer entered into a securities purchase agreement (the "January 2023 Purchase Agreement") with certain purchasers, including certain of the Reporting Persons, pursuant to which the Issuer agreed to sell to the purchasers (the "January 2023 Purchasers") in a private placement shares of Common Stock (the "January 2023 Shares") and accompanying warrants (the "January 2023 Warrants") to purchase shares of Common Stock (the "January 2023 Warrant Shares"). Pursuant to the registration rights agreement entered into with the January 2023 Purchasers on January 4, 2023 (the "January 2023 Registration Rights Agreement"), the Issuer filed a registration statement with the Securities and Exchange Commission (the "SEC") covering resales of the January 2023 Shares and the January 2023 Warrant Shares by the January 2023 Purchasers on February 3, 2023, which was declared effective on February 10, 2023.

On July 31, 2023, the Issuer entered into a securities purchase agreement (the "July 2023 Purchase Agreement") with certain purchasers, including certain of the Reporting Persons, pursuant to which the Issuer agreed to issue and sell to the purchasers (the "July 2023 Purchasers") in a private placement (the "July 2023 Private Placement") shares of Common Stock and accompanying warrants (the "July 2023 Warrants") to purchase shares of Common Stock (the "July 2023 Warrant Shares"). For purposes of complying with Listing Rules 5635(b) and 5635(d) of The Nasdaq Stock Market LLC, the July 2023 Private Placement took place in two separate closings on July 31, 2023 and September 11, 2023. Pursuant to a registration rights agreement entered into with the July 2023 Purchasers on July 31, 2023 (the "July 2023 Registration Rights Agreement"), the Issuer filed a registration statement with the SEC covering resales of the July 2023 Shares and July 2023 Warrant Shares by the July 2023 Purchasers on August 29, 2023, which was declared effective on September 13, 2023.

On December 27, 2023, Comera SPV LLC acquired 3,895.53 shares of Preferred Stock (the “Preferred Shares”) from Maxim Partners LLC pursuant to that certain securities purchase agreement by and between Comera SPV and Maxim Partners (the “Preferred Stock SPA”). The Preferred Stock SPA contained customary terms and conditions, and Comera SPV paid \$500,000 for the Preferred Shares, which was the aggregate amount of the proceeds from contributions made to Comera SPV by the members of Comera SPV, including the Reporting Persons. Cherington is the sole managing member of Comera SPV and has authority to make investment and voting decisions with respect to the Preferred Shares held by Comera SPV. The terms of the Preferred Shares were previously disclosed by the Issuer in its Current Report on Form 8-K dated as of May 19, 2022.

On December 29, 2023, the Issuer entered into a securities purchase agreement (the “December 2023 Purchase Agreement”) with certain persons, including each of the Reporting Persons, pursuant to which the Issuer agreed to issue and sell in a private placement (the “December 2023 Private Placement”) \$1,500,000 in aggregate principal amount of 12.0% Senior Secured Convertible Notes due 2024 (collectively, the “December 2023 Notes”) and accompanying warrants (the “December 2023 Warrants”) to purchase up to an aggregate number of shares (the “December 2023 Warrant Shares”) of the Issuer’s Common Stock equal to 200% of the number of the shares of Common Stock (the “Note Shares”) issuable upon conversion of the December 2023 Notes immediately following the closing of the December 2023 Private Placement. Pursuant to the December 2023 Purchase Agreement, as long as any person owns any securities purchased thereunder, and upon written request by holders of December 2023 Notes representing at least a majority of the aggregate principal amount of the December 2023 Notes then outstanding, the Issuer has agreed to register the resale of all of the Note Shares and December 2023 Warrant Shares with the SEC as soon as reasonably practicable.

Pursuant to the December 2023 Purchase Agreement, the holders of the securities purchased thereunder, including the Reporting Persons, have a right, for one year from the date of execution of the December 2023 Purchase Agreement, to participate in up to 50% in the aggregate offering amount of any equity securities that the Issuer may issue or sell, subject to certain limited exceptions.

Pursuant to and in accordance with the terms and conditions of the December 2023 Purchase Agreement, the holders of the securities purchased thereunder, including the Reporting Persons, have a right, until the later of December 29, 2024 and the payment in full in cash of all obligations in respect of the December 2023 Purchase Agreement and securities issued thereunder, to purchase all outstanding shares of the Issuer’s Common Stock not then held by such holders (the “Share Purchase”). The December 2023 Purchase Agreement states that the purchase price of the Share Purchase will be cash consideration per share of Common Stock equal to the greater of: (i) \$0.0825 per share of Common Stock and (ii) an amount per share of Common Stock equal to 1.5 times the closing price of the Issuer’s Common Stock on the date immediately preceding the execution of a definitive agreement to effect the Share Purchase. The Share Purchase process may be initiated upon the written notice of holders of December 2023 Notes representing at least two-thirds of the aggregate principal amount of the December 2023 Notes then outstanding.

The completion of the Share Purchase will be subject to a number of conditions, including, among other things, satisfactory completion of its due diligence review of the Issuer, the negotiation and execution of a definitive merger agreement containing representations, warranties, covenants, closing conditions and other terms and provisions as are appropriate for a transaction of this nature and which are mutually agreed upon by the parties, and the receipt of all necessary governmental and regulatory approvals and all third party consents and approvals as are required in connection with the Share Purchase.

In connection with the Share Purchase right, until the later of December 29, 2024 and the payment in full in cash of all obligations in respect of the December 2023 Purchase Agreement and the securities issued thereunder, the Issuer has agreed to deal exclusively with the holders of the securities acquired under the December 2023 Purchase Agreement, such that neither the Issuer nor any of its representatives will, directly or indirectly, solicit, encourage or initiate any offer or proposal from, or engage in any discussions with, or provide any information to, any corporation, partnership, person or other entity or group concerning the sale of the Issuer or any of its securities or assets or any merger, consolidation, liquidation, restructuring, recapitalization or similar transaction involving the Issuer, except with respect to the sale of assets in the ordinary course of business consistent with past practice.

The foregoing descriptions in this Item 3 do not purport to be complete and are qualified in their entirety by reference to the January 2023 Warrant, the January 2023 Purchase Agreement, the January 2023 Registration Rights Agreement, the July 2023 Warrant, the July 2023 Purchase Agreement, the July 2023 Registration Rights Agreement, the December 2023 Purchase Agreement, the December 2023 Note and the December 2023 Warrant, copies or forms of which are included as Exhibits 99.2, 99.3, 99.4, 99.5, 99.6, 99.7, 99.8, 99.9 and 99.10, respectively, and incorporated herein by reference in their entirety.

Item 4. Purpose of Transaction.

The Reporting Persons that purchased the Preferred Shares and the securities in the December 2023 Private Placement did so with the intention of acquiring all outstanding shares of the Issuer's Common Stock not then held by such holders and the other Reporting Persons. In furtherance thereof, on January 2, 2024, on behalf of himself and certain of the other Reporting Persons representing the holders of at least two-thirds of the aggregate principal amount of the December 2023 Notes then outstanding, Cherington notified the Issuer that the option to initiate the Share Purchase is being exercised. The Share Purchase remains subject to the terms and conditions in the December 2023 Purchase Agreement.

The transactions of the Reporting Persons reported herein may result in one or more of the transactions, events or actions specified in clauses (a) through (j) of Item 4 of Schedule 13D, including, without limitation, an acquisition of additional securities of the Issuer, an extraordinary corporate transaction (such as a merger) involving the Issuer, and other material changes in the Issuer's business or corporate structure.

Nothing in this Schedule 13D is meant to be, nor should be construed as, an offer to buy or the solicitation of an offer to sell any of Issuer's securities. Nothing herein is intended to create any legal obligations and no such obligations will arise unless and until definitive transaction documentation with the Issuer has been executed and delivered. No binding obligation on the part of the Reporting Persons or any of their affiliates will arise with respect to the filing of this Schedule 13D. The Reporting Persons do not intend to provide additional disclosures unless and until a definitive agreement has been reached or unless disclosure is otherwise required under applicable U.S. securities laws.

Item 5. Interest in Securities of the Issuer.

(a)-(b) The information contained on the cover page to this Schedule 13D and as set forth or incorporated in Items 2, 3, 4 and 6 hereof is incorporated by reference.

(c) Except as disclosed in this Schedule 13D, each of the Reporting Persons reports that it has not effected any transactions in shares of Common Stock in the past 60 days.

(d) Except as disclosed in this Schedule 13D, no other person has the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, Common Stock beneficially owned by the Reporting Persons.

(e) Not applicable.

Item 6. Contracts, Arrangements, Understandings or Relationships with Respect to Securities of the Issuer.

The information disclosed under Items 3, 4 and 5 above is hereby incorporated by reference into this Item 6. Except as set forth in this Schedule 13D, no Reporting Person has any contracts, arrangements, understandings or relationships with any persons with respect to any securities of the Issuer.

Item 7. Materials to be Filed as Exhibits.

Exhibit No.	Description
99.1	Joint Filing Agreement (filed herewith).
99.2	Business Combination Agreement, dated as of January 31, 2022, among the Issuer, OTR Acquisition Corp., CLS Sub Merger 1 Corp., CLS Sub Merger 2 Corp. and Comera Life Sciences, Inc. (incorporated by reference to Exhibit 2.1 to the Issuer’s Quarterly Report on Form 10-Q filed on August 15, 2022).
99.3	First Amendment to Business Combination Agreement, dated as of May 19, 2022 among the Issuer, OTR Acquisition Corp., CLS Sub Merger 1 Corp., CLS Sub Merger 2 Corp. and Comera Life Sciences, Inc. (incorporated by reference to Exhibit 2.2 to the Issuer’s Current Report on Form 8-K filed on May 25, 2022).
99.2	Form of January 2023 Common Stock Purchase Warrant (incorporated by reference to Exhibit 4.1 of the Issuer’s Current Report on Form 8-K filed on January 4, 2023).
99.3	January 2023 Securities Purchase Agreement (incorporated by reference to Exhibit 10.1 of the Issuer’s Current Report on Form 8-K filed on January 4, 2023).
99.4	January 2023 Registration Rights Agreement (incorporated by reference to Exhibit 10.2 of the Issuer’s Current Report on Form 8-K filed on January 4, 2023).
99.5	Form of July 2023 Common Stock Purchase Warrant (incorporated by reference to Exhibit 4.1 of the Issuer’s Current Report on Form 8-K filed on August 1, 2023).
99.6	July 2023 Securities Purchase Agreement (incorporated by reference to Exhibit 10.1 of the Issuer’s Current Report on Form 8-K filed on August 1, 2023).
99.7	July 2023 Registration Rights Agreement (incorporated by reference to Exhibit 10.2 of the Issuer’s Current Report on Form 8-K filed on August 1, 2023).
99.8	Securities Purchase Agreement, dated December 29, 2023, by and among the Issuer and the Purchasers defined therein (incorporated by reference to Exhibit 10.1 of the Issuer’s Current Report on Form 8-K filed on December 29, 2023).
99.9	Form of Senior Secured Convertible Note (incorporated by reference to Exhibit 4.1 of the Issuer’s Current Report on Form 8-K filed on December 29, 2023).
99.10	Form of Common Stock Warrant (incorporated by reference to Exhibit 4.2 of the Issuer’s Current Report on Form 8-K filed on December 29, 2023).

SIGNATURES

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: January 5, 2024

/s/ Charles Cherington
Charles Cherington

/s/ John D. Halpern
John D. Halpern

/s/ Katherine H. Halpern
Katherine H. Halpern

/s/ Tucker R. Halpern
Tucker R. Halpern

WARREN STREET LEGACY, LLC

By: /s/ Ian H. Halpern
Name: Ian H. Halpern
Title: Managing Member

/s/ George P. Denny III
George P. Denny III

FREEBIRD PARTNERS LP

By: /s/ Curtis Huff
Name: Curtis Huff
Title: President and Chairman

FREEBIRD INVESTMENTS LLC

By: /s/ Curtis Huff
Name: Curtis Huff
Title: Sole Member

/s/ Curtis Huff
Curtis Huff

/s/ Shameek Konar

Shameek Konar

/s/ Victoria Konar

Victoria Konar

IAF, LLC

By: /s/ Edward Bennett

Name: Edward Bennett

Title: Authorized Signatory

/s/ Stephen E. Older

Stephen E. Older

/s/ David Soane

David Soane

THE SOANE FAMILY TRUST

By: /s/ David Soane

Name: David Soane

Title: Trustee

JOINT FILING AGREEMENT

The undersigned, being duly authorized thereunder, hereby execute this agreement as an exhibit to this Schedule 13D to evidence the agreement of the below-named parties, in accordance with the rules promulgated pursuant to the Securities Exchange Act of 1934, to file this Schedule jointly on behalf of each such party.

Dated: January 5, 2024

/s/ Charles Cherington

Charles Cherington

/s/ John D. Halpern

John D. Halpern

/s/ Katherine H. Halpern

Katherine H. Halpern

/s/ Tucker R. Halpern

Tucker R. Halpern

WARREN STREET LEGACY, LLC

By: /s/ Ian H. Halpern

Name: Ian H. Halpern

Title: Managing Member

/s/ George P. Denny III

George P. Denny III

FREEBIRD PARTNERS LP

By: /s/ Curtis Huff

Name: Curtis Huff

Title: President and Chairman

FREEBIRD INVESTMENTS LLC

By: /s/ Curtis Huff

Name: Curtis Huff

Title: Sole Member

/s/ Curtis Huff

Curtis Huff

/s/ Shameek Konar

Shameek Konar

/s/ Victoria Konar

Victoria Konar

IAF, LLC

By: /s/ Edward Bennett

Name: Edward Bennett

Title: Authorized Signatory

/s/ Stephen E. Older

Stephen E. Older

/s/ David Soane

David Soane

THE SOANE FAMILY TRUST

By: /s/ David Soane

Name: David Soane

Title: Trustee
