

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

SCHEDULE 13D

Under the Securities Exchange Act of 1934
(Amendment No. 10)*

Yield10 Bioscience, Inc.
(Name of Issuer)

Common Stock, par value \$0.01 per share
(Title of Class of Securities)

98585K854
(Cusip Number)

Jack W. Schuler
100 N. Field Drive, Suite 360
Lake Forest, Illinois 60045
(224) 880-1210

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

April 4, 2024**
(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 Sections 240.13d-1(e), 240.13d-1(f) or 240.13d-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 Section 240.13d-7 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.

** This constitutes a late filing due to inadvertent administrative error.

(Continued on following pages)

Page 1 of 7 Pages

Exhibit Index Found on Page 7

1	NAMES OF REPORTING PERSONS Jack W. Schuler	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> ** ** The reporting persons making this filing hold an aggregate of 65,205 Shares (as defined in Item 1) and hold certain warrants currently exercisable for up to an aggregate of 48,307 Shares, together representing aggregate beneficial ownership of 16.4% of the class of Shares outstanding. The reporting person on this cover page, however, is a beneficial owner only of the securities reported by it on this cover page.	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (See Instructions) OO	
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 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 113,512 ¹
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 113,512 ¹
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 113,512 ¹	
12	CHECK 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) 16.4% ²	
14	TYPE OF REPORTING PERSON (See Instructions) IN	

¹ Includes (i) 16,432 Shares acquirable within 60 days of the date hereof upon the exercise of 2019 Series B Warrants (as defined in the Preliminary Note), and (ii) 31,875 Shares acquirable within 60 days of the date hereof upon the exercise of August 2023 Warrants (as defined in the Preliminary Note). Excludes 13,982 Shares acquirable upon the exercise of May 2023 Warrants (as defined in the Preliminary Note), which are not exercisable within 60 days of the date hereof due to the Beneficial Ownership Limitation (as defined in the Preliminary Note).

² The percentages set forth herein are calculated based on 642,546 Shares outstanding as of May 14, 2024, as reported by the Issuer in its Form 10-Q filed with the SEC on May 15, 2024.

1	NAMES OF REPORTING PERSONS Jack W. Schuler Living Trust	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> ** ** The reporting persons making this filing hold an aggregate of 65,205 Shares (as defined in Item 1) and hold certain warrants currently exercisable for up to an aggregate of 48,307 Shares, together representing aggregate beneficial ownership of 16.4% of the class of Shares outstanding. The reporting person on this cover page, however, is a beneficial owner only of the securities reported by it on this cover page.	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (See Instructions) PF	
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION Illinois	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 112,096 ¹
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 112,096 ¹
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 112,096 ¹	
12	CHECK 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) 16.2% ²	
14	TYPE OF REPORTING PERSON (See Instructions) OO	

¹ Includes (i) 16,432 Shares acquirable within 60 days of the date hereof upon the exercise of 2019 Series B Warrants (as defined in the Preliminary Note), and (ii) 31,875 Shares acquirable within 60 days of the date hereof upon the exercise of August 2023 Warrants (as defined in the Preliminary Note). Excludes 13,982 Shares acquirable upon the exercise of May 2023 Warrants (as defined in the Preliminary Note), which are not exercisable within 60 days of the date hereof due to the Beneficial Ownership Limitation (as defined in the Preliminary Note).

² The percentages set forth herein are calculated based on 642,546 Shares outstanding as of May 14, 2024, as reported by the Issuer in its Form 10-Q filed with the SEC on May 15, 2024.

1	NAMES OF REPORTING PERSONS Schuler Education Foundation	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> ** ** The reporting persons making this filing hold an aggregate of 65,205 Shares (as defined in Item 1) and hold certain warrants currently exercisable for up to an aggregate of 48,307 Shares, together representing aggregate beneficial ownership of 16.4% of the class of Shares outstanding. The reporting person on this cover page, however, is a beneficial owner only of the securities reported by it on this cover page.	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (See Instructions) PF	
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION Illinois	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 1,416
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 1,416
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,416	
12	CHECK 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) 0.2% ¹	
14	TYPE OF REPORTING PERSON (See Instructions) CO	

¹ The percentages set forth herein are calculated based on 642,546 Shares outstanding as of May 14, 2024, as reported by the Issuer in its Form 10-Q filed with the SEC on May 15, 2024.

This Amendment No. 10 to Schedule 13D (this “Amendment”) amends and supplements the Schedule 13D initially filed on August 29, 2014, as amended and supplemented by Amendment No. 1 thereto filed on June 23, 2015, Amendment No. 2 thereto filed on ----August 2, 2017, Amendment No. 3 thereto filed on June 26, 2019, Amendment No. 4 thereto filed on February 6, 2020, Amendment No. 5 thereto filed on February 13, 2020, Amendment No. 6 thereto filed on August 31, 2020, Amendment No. 7 thereto filed on February 5, 2021, Amendment No. 8 thereto filed on May 26, 2023 and Amendment No 9 thereto filed on October 11, 2023 (as so amended and supplemented, the “Prior Schedule 13D” and, as amended and supplemented by this Amendment, this “Schedule 13D”).

This Amendment is being filed in part to reflect a greater-than-1% decrease in the Reporting Persons’ previously reported beneficial ownership percentages as a result of an increase (prior to giving effect to the Reverse Stock Split) in the number of Shares outstanding, as reported by the Issuer in its Form 10-K filed with the SEC on April 4, 2024.

Capitalized terms used without definition in this Amendment have the meanings ascribed thereto in the Prior Schedule 13D.

Preliminary Note

Capitalized terms used in this Preliminary Note without definition have the meanings ascribed to them elsewhere in this Schedule 13D.

On May 2, 2024 the Issuer effected a 1-for-24 reverse stock split of the Shares (the “Reverse Stock Split”), as reported by the Issuer in its Form 8-K filed with the SEC on May 1, 2024. The amount of securities beneficially owned reported herein has been adjusted and approximated to reflect the Reverse Stock Split.

Securities Holdings Resulting in Current Beneficial Ownership of Shares

As of the date hereof: (i) the Jack W. Schuler Living Trust (the “Trust”) holds 63,789 Shares; (ii) the Schuler Education Foundation (the “Foundation”) holds 1,416 Shares; (iii) the Trust holds Series B Warrants (the “2019 Series B Warrants”), issued on November 19, 2019 and expiring on May 19, 2027, which are currently exercisable (after giving effect to the Reverse Stock Split) for a total of up to 16,432 Shares; and (iv) the Trust holds Common Stock Warrants (the “August 2023 Warrants”), issued on August 15, 2023 and expiring on August 15, 2028, which are currently exercisable (after giving effect to the Reverse Stock Split) for a total of up to 31,875 Shares.

The 2019 Series B Warrants and the August 2023 Warrants (together, the “Exercisable Warrants”) are exercisable within 60 days of the date hereof. Accordingly, pursuant to Rule 13d-3(d) under the Exchange Act, the Trust currently is deemed to have beneficial ownership of the aggregate 48,307 Shares acquirable upon exercise of the Exercisable Warrants held by the Trust.

Securities Holdings Not Resulting in Current Beneficial Ownership of Shares

In addition, the Trust holds Common Stock Warrants (the “May 2023 Warrants”), issued on May 5, 2023 and expiring on November 6, 2028, which are currently exercisable (after giving effect to the Reverse Stock Split but subject to the Beneficial Ownership Limitation) for a total of up to 13,982 Shares.

The terms of the May 2023 Warrants provide that May 2023 Warrants may not be exercised if, after such exercise, the Reporting Persons would beneficially own, as determined in accordance with Section 13(d) of the Exchange Act, more than 9.99% (or, at the election of the holder and after 61 days’ advance notice to the Issuer, 19.99%) of the Shares then issued and outstanding (the “Beneficial Ownership Limitation”). As of the date hereof, the Beneficial Ownership Limitation (which, as applied to the Reporting Persons, is 9.99% as of the date of the filing of this Amendment) does not permit the Trust to exercise any portion of the May 2023 Warrants. In providing the beneficial ownership information set forth herein, the Reporting Persons have assumed that, due to the Beneficial Ownership Limitation, none of the aggregate 13,982 Shares underlying the May 2023 Warrants are acquirable by the Trust.

Item 5. Interest in Securities of the Issuer

This Amendment hereby amends and restates Item 5 of the Prior Schedule 13D in its entirety as follows:

“Mr. Schuler

- (a),(b) The information set forth in Rows 7 through 13 of the cover page hereto for Jack W. Schuler (“Mr. Schuler”) is incorporated herein by reference. The percentage amount set forth in Row 13 for all cover pages filed herewith is calculated based upon the 642,546 Shares outstanding as of May 14, 2024, as reported by the Issuer in its Form 10-Q filed with the Securities and Exchange Commission (the “SEC”) on May 15, 2024.
- (c) None.
- (d) The Trust has the power to direct the receipt of dividends relating to, or the disposition of the proceeds of the sale of, the Shares held by it and the Shares that it has the right to acquire upon the exercise of Exercisable Warrants. The Foundation has the power to direct the receipt of dividends relating to, or the disposition of the proceeds of the sale of, the Shares held by it. Mr. Schuler is the sole trustee of the Trust and the President of the Foundation.
- (e) Not applicable.

The Trust

- (a),(b) The information set forth in Rows 7 through 13 of the cover page hereto for the Trust is incorporated herein by reference.
- (c) None.
- (d) The Trust has the power to direct the receipt of dividends relating to, or the disposition of the proceeds of the sale of, the Shares held by it and the Shares that it has the right to acquire upon the exercise of Exercisable Warrants. Mr. Schuler is the sole trustee of the Trust.

(e) Not applicable.

The Foundation

(a),(b) The information set forth in Rows 7 through 13 of the cover page hereto for the Foundation is incorporated herein by reference.

(c) None.

(d) The Foundation has the power to direct the receipt of dividends relating to, or the disposition of the proceeds of the sale of, the Shares held by it. Mr. Schuler is the President of the Foundation.

(e) Not applicable.

As of the date hereof, Mr. Schuler may be deemed to beneficially own, in the aggregate, 113,512 Shares, representing 16.4% of the Shares outstanding. This amount consists of: (i) 63,789 Shares held by the Trust; (ii) 16,432 Shares acquirable by the Trust upon the exercise of 2019 Series B Warrants; (iii) 31,875 Shares acquirable by the Trust upon the exercise of August 2023 Warrants; and (iv) 1,416 Shares held by the Foundation. As sole trustee of the Trust, Mr. Schuler shares with the Trust the power to vote or direct the vote, and the power to dispose or direct the disposition of, the Shares held by the Trust or acquirable by the Trust upon the exercise of Exercisable Warrants. As President of the Foundation, Mr. Schuler shares with the Foundation the power to vote or direct the vote, and the power to dispose or direct the disposition of, the Shares held by the Foundation.”

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

This Amendment hereby amends and supplements Item 6 of the Prior Schedule 13D by adding the following thereto:

“Expiration of 2017 Warrants

On January 7, 2024, the 2017 Warrants expired unexercised pursuant their terms.”

SIGNATURES

After reasonable inquiry and to the best of our knowledge and belief, the undersigned certify that the information set forth in this statement is true, complete and correct.

Dated: May 23, 2024

/s/ Jack W. Schuler

Jack W. Schuler

Jack W. Schuler Living Trust

/s/ Jack W. Schuler

By Jack W. Schuler, Sole Trustee

Schuler Education Foundation

/s/ Jack W. Schuler

By Jack W. Schuler, President

EXHIBIT INDEX

1. Joint Acquisition Statement Pursuant to Section 240.13d-1(k), dated May 26, 2023*****
2. Securities Purchase Agreement, dated August 4, 2014, by and among Metabolix, Inc. (n/k/a Yield10 Bioscience, Inc.) and the investors named therein*
3. Amended and Restated Letter Agreement, dated August 4, 2014, by and among Metabolix, Inc. (n/k/a Yield10 Bioscience, Inc.), Jack W. Schuler, Renate Schuler and the Schuler Family Foundation*
4. Securities Purchase Agreement, dated June 15, 2015, by and among Metabolix, Inc. (n/k/a Yield10 Bioscience, Inc.) and the investors named therein**
5. Standstill Agreement, dated June 19, 2015, by and among Metabolix, Inc. (n/k/a Yield10 Bioscience, Inc.), Jack W. Schuler, Renate Schuler and the Schuler Family Foundation**
6. Securities Purchase Agreement, dated July 3, 2017, by and among Yield10 Bioscience, Inc. and the investors named therein**
7. Underwriting Agreement, dated as of December 19, 2017, by and between Yield10 Bioscience, Inc. and Ladenburg Thalmann & Co. Inc. as representative of the several underwriters, if any, named on Schedule I thereto**
8. Form of 2017 Series A Common Stock Purchase Warrant***
9. Form of 2017 Series B Common Stock Purchase Warrant***
10. Form of Securities Purchase Agreement, dated as of March 14, 2019, by and among Yield10 Bioscience, Inc. and the investors named therein***
11. Placement Agency Agreement, dated as of March 14, 2019, by and between Yield10 Bioscience, Inc. and Ladenburg Thalmann & Co. Inc.***
12. Certification of Designation of Preferences, Rights, and Limitations of Series B Convertible Preferred Stock****
13. Form of 2019 Series A Common Stock Purchase Warrant****
14. Form of 2019 Series B Common Stock Purchase Warrant****
15. Form of Securities Purchase Agreement, dated as of November 14, 2019, by and among Yield10 Bioscience, Inc. and the investors named therein****
16. Certificate of Amendment to the Amended and Restated Certificate of Incorporation of Yield10 Bioscience, Inc.****
17. Underwriting Agreement, dated as of August 22, 2020, by and between Yield10 Bioscience, Inc. and Maxim Group LLC as representative of the several underwriters, if any, named on Schedule I thereto*****
18. Securities Purchase Agreement, dated as of August 22, 2020, by and between Yield10 Bioscience, Inc. and the investors listed on Schedule I thereto*****
19. Underwriting Agreement, dated as of January 31, 2021, by and between Yield10 Bioscience, Inc. and Maxim Group LLC as representative of the several underwriters, if any, named on Schedule I thereto*****
20. Securities Purchase Agreement, dated May 5, 2023*****
21. Form of May 2023 Common Stock Purchase Warrant*****
22. Form of Securities Purchase Agreement, dated as of August 10, 2023*****
23. Form of August 2023 Common Stock Purchase Warrant*****

* Filed as an exhibit to the Schedule 13D filed on August 29, 2014

** Filed as an exhibit to the Schedule 13D filed on August 2, 2017

*** Filed as an exhibit to the Schedule 13D filed on June 26, 2019

**** Filed as an exhibit to the Schedule 13D filed on February 6, 2020

***** Filed as an exhibit to the Schedule 13D filed on August 31, 2020

***** Filed as an exhibit to the Schedule 13D filed on February 5, 2021

***** Filed as an exhibit to the Schedule 13D filed on May 26, 2023

***** Filed as an exhibit to the Schedule 13D filed on October 11, 2023