

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

SCHEDULE 13D

Under the Securities Exchange Act of 1934
(Amendment No. 3)*

YIELD10 BIOSCIENCE, INC.

(Name of Issuer)

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

98585K201
(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)

December 19, 2017
(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.

Note: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See §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).

1. NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Jack W. Schuler

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP

(see instructions)

(a)

(b)

3. SEC USE ONLY

4. SOURCE OF FUNDS (see instructions)

OO

5. CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e)

6. CITIZENSHIP OR PLACE OF ORGANIZATION

United States

7. SOLE VOTING POWER

0

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON WITH

8. SHARED VOTING POWER

5,871,178(1)

9. SOLE DISPOSITIVE POWER

0

10. SHARED DISPOSITIVE POWER

5,871,178(1)

11. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

5,871,178(1)

12. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES

(see instructions)

13. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

46.99% (2)

14. TYPE OF REPORTING PERSON (see instructions)

IN

(1) Includes 2,067,136 shares of Common Stock underlying warrants exercisable at any time by the Jack W. Schuler Living Trust, the holder thereof.

(2) Based on information provided by the Issuer in its most recently filed Form 10-Q for the quarterly period ended March 31, 2019.

1. NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Renate Schuler

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP
(see instructions)

(a)

(b)

3. SEC USE ONLY

4. SOURCE OF FUNDS (see instructions)

OO

5. CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e)

6. CITIZENSHIP OR PLACE OF ORGANIZATION

United States

7. SOLE VOTING POWER

843

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON WITH

8. SHARED VOTING POWER

965,914

9. SOLE DISPOSITIVE POWER

843

10. SHARED DISPOSITIVE POWER

965,914

11. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

966,757

12. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES
(see instructions)

13. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

7.74% (1)

14. TYPE OF REPORTING PERSON (see instructions)

IN

(1) Based on information provided by the Issuer in its most recently filed Form 10-Q for the quarterly period ended March 31, 2019.

1. NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Schuler Family Foundation
EIN – 36-4154510

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP
(see instructions)

(a)
(b)

3. SEC USE ONLY

4. SOURCE OF FUNDS (see instructions)

PF

5. CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e)

6. CITIZENSHIP OR PLACE OF ORGANIZATION

United States

7. SOLE VOTING POWER

965,914

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON WITH

8. SHARED VOTING POWER

0

9. SOLE DISPOSITIVE POWER

965,914

10. SHARED DISPOSITIVE POWER

11. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

965,914

12. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES
(see instructions)

13. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

7.73% (1)

14. TYPE OF REPORTING PERSON (see instructions)

CO

(1) Based on information provided by the Issuer in its most recently filed Form 10-Q for the quarterly period ended March 31, 2019.

1. NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Jack W. Schuler Living Trust

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP

(see instructions)

(a)

(b)

3. SEC USE ONLY

4. SOURCE OF FUNDS (see instructions)

PF

5. CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e)

6. CITIZENSHIP OR PLACE OF ORGANIZATION

United States

7. SOLE VOTING POWER

4,905,264

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON WITH

8. SHARED VOTING POWER

0

9. SOLE DISPOSITIVE POWER

4,905,264

10. SHARED DISPOSITIVE POWER

11. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

4,905,264

12. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES

(see instructions)

13. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

39.26% (1)

14. TYPE OF REPORTING PERSON (see instructions)

OO

(1) Based on information provided by the Issuer in its most recently filed Form 10-Q for the quarterly period ended March 31, 2019.

Explanatory Note

This Amendment No. 3 (this “Amendment No. 3”) amends and supplements the Schedule 13D originally filed with the Securities and Exchange Commission (the “SEC”) on August 29, 2014, by the reporting persons identified therein, as amended by Amendment No. 1 filed with the SEC on June 23, 2015, and as further amended by Amendment No. 2 filed with the SEC on August 2, 2017 by the Reporting Persons identified therein (as cumulatively amended, the “Schedule 13D”), with respect to shares of common stock, par value \$0.01 per share (“Common Stock”) of Yield10 Bioscience, Inc. (formerly Metabolix, Inc.), a Delaware corporation (the “Issuer”) beneficially owned by the Reporting Persons. Except as amended or supplemented in this Amendment No. 3, all other information in the Schedule 13D is as set forth previously. Capitalized terms used in this Amendment No. 3 but not defined herein shall have the meanings previously ascribed thereto in the Schedule 13D.

Item 1. Security and Issuer.

This statement on Schedule 13D relates to the common stock, \$0.01 par value per share, of Yield10 Bioscience, Inc., a Delaware corporation. The principal executive office of the Issuer is 19 Presidential Way, Woburn, MA 01801.

Item 4. Purpose of Transaction.

December 2017 Underwriting Agreement

On December 19, 2017, the Issuer entered into an Underwriting Agreement (the “Underwriting Agreement”) with Ladenburg Thalmann & Co. Inc. (the “Underwriter”), pursuant to which the Issuer agreed to issue and sell, in a registered public offering by the Issuer (the “Public Offering”), 3,828,000 Class A Units (the “Class A Units”), with each Class A Unit consisting of one share of the Company’s common stock, par value \$0.01 per share (the “July 2017 Common Stock”), a warrant to purchase one share of Common Stock, exercisable at a price of \$2.25 for a five year period (a “July 2017 Series A Warrant”), and a warrant to purchase 0.5 of one share of Common Stock, exercisable at a price of \$2.25 for a nine month period (a “Series B Warrant” and together with the July 2017 Series A Warrants, the “Warrants”), with each Class A Unit to be offered to the public at an offering price of \$2.25 per Class A Unit.

In the Public Offering, the Jack W. Schuler Living Trust acquired 1,906,744 shares of July 2017 Common Stock and 1,906,744 July 2017 Series A Warrants for an aggregate purchase price of \$4,404,387.96.

March 2019 Purchase Agreement

On March 14, 2019, the Issuer entered into a Securities Purchase Agreement (the “Purchase Agreement”) with certain investors named therein (the “Investors”), including certain of the Reporting Persons, pursuant to which the Company agreed to issue and sell, in a registered public offering by the Company directly to the Investors (the “Offering”), an aggregate of 2,421,662 shares (the “Shares”) of common stock, par value \$0.01 per share, of the Company (“March 2019 Common Stock”), at an offering price of \$1.2101 per share for gross proceeds of approximately \$2.9 million before deducting the placement agent fee and related offering expenses. The offering price per share was equal to the closing price of the Common Stock on the Nasdaq Capital Market on March 13, 2019. The Shares were offered by the Company pursuant to a registration statement on Form S-3 (File No. 333-217051), which was filed with the Securities and Exchange Commission (the “Commission”) on March 31, 2017 and was declared effective by the Commission on April 12, 2017.

On March 14, 2019, the Company entered into a Placement Agency Agreement (the “Placement Agency Agreement”) with Ladenburg Thalmann & Co. Inc. (“Ladenburg” or the “Placement Agent”) pursuant to which the Company engaged Ladenburg as the sole placement agent in connection with the Offering. The Placement Agent agreed to use its reasonable best efforts to arrange for the sale of the Shares. The Company agreed to pay the Placement Agent a placement agent fee in cash equal to 8% of the gross proceeds from the sale of the Shares, with the fee reduced to 3% for gross cash consideration paid by certain investors, including the Reporting Persons who acquired Shares in the Offering.

Under the terms of the Purchase Agreement, the Jack W. Schuler Living Trust acquired 552,427 shares of March 2019 Common Stock in exchange for the payment of a purchase price of \$668,491.91.

Additional Disclosure

Jack W. Schuler and the Jack W. Schuler Living Trust intend to hold the July 2017 Common Stock, the July 2017 Series A Warrants, and March 2019 Common Stock (collectively, the "Securities") for investment purposes in the ordinary course of their business of investing in securities for their own account. Jack W. Schuler and the Jack W. Schuler Living Trust reserve the right to formulate plans and/or make proposals, and take such actions with respect to their investment in the Issuer, including, subject to applicable law, (i) to hold their Securities as a passive investor or as an active investor, (ii) to acquire beneficial ownership of additional Securities in the open market, in privately negotiated transactions or otherwise, (iii) to dispose of all or part of their holdings of Securities, (iv) to take other actions which could involve one or more of the types of transactions or have one or more of the results described in Item 4 of Schedule 13D, or (v) to change their intention with respect to any or all of the matters referred to in Item 4 of Schedule 13D.

Item 5. Interest in Securities of the Issuer.

(a)

The 5,872,021 shares of Common Stock for which this schedule is filed consist of (i) 843 shares owned by Renate Schuler, representing less than 0.1% of the shares of the Common Stock of the Issuer outstanding, (ii) 4,905,264 shares owned by the Jack W. Schuler Living Trust (including 2,067,136 shares of Common Stock underlying warrants), representing approximately 39.26% of the shares of the Common Stock of the Issuer outstanding, and (iii) 965,914 shares owned by the Schuler Family Foundation, representing approximately 7.73% of the shares of the Common Stock of the Issuer outstanding.

Mr. Schuler disclaims beneficial ownership in (i) the 843 shares owned by his wife, Renate Schuler and (ii) the 965,914 shares owned by the Schuler Family Foundation, a tax-exempt private operating foundation of which Mr. Schuler and Ms. Schuler are two of the three directors. Ms. Schuler disclaims beneficial ownership in the 965,914 shares owned by the Schuler Family Foundation.

(b)

Jack W. Schuler:

- (i) Sole power to vote or to direct the vote: 0
- (ii) Shared power to vote or direct the vote: 5,871,178
- (iii) Sole power to dispose or to direct the disposition of: 0
- (iv) Shared power to dispose of to direct the disposition of: 5,871,178

Renate Schuler:

- (i) Sole power to vote or to direct the vote: 843
- (ii) Shared power to vote or direct the vote: 965,914
- (iii) Sole power to dispose or to direct the disposition of: 843
- (iv) Shared power to dispose of to direct the disposition of: 965,914

The Schuler Family Foundation:

- (i) Sole power to vote or to direct the vote: 965,914
 - (ii) Shared power to vote or direct the vote: 0
 - (iii) Sole power to dispose or to direct the disposition of: 965,914
 - (iv) Shared power to dispose of to direct the disposition of: 0
-

Jack W. Schuler Living Trust:

- (i) Sole power to vote or to direct the vote: 4,905,264
- (ii) Shared power to vote or direct the vote: 0
- (iii) Sole power to dispose or to direct the disposition of: 4,905,264
- (iv) Shared power to dispose of to direct the disposition of: 0

(c)

Except as set forth in this Amendment No. 3, the Reporting Persons have not effected any transaction in the shares of Common Stock in the last 60 days.

(d)

Except as set forth in this Amendment No. 2, to the knowledge of the Reporting Persons, no person had the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, securities covered by this Schedule 13D.

(e) Not Applicable.

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

Except as otherwise set forth in this Schedule 13D and the exhibits hereto, there are no contracts, arrangements, understandings or relationships between the persons named in Item 2 and any other person with respect to any securities of the Issuer.

Item 7. Material to be filed as Exhibits.

Exhibit	Title
1	Amended and Restated Joint Filing Agreement, dated as of August 1, 2017, by and among Jack W. Schuler, Renate Schuler, the Schuler Family Foundation and Jack W. Schuler Living Trust (incorporated by reference to the Amendment No. 2 to Schedule 13D filed by the Reporting Persons on August 2, 2017).
2	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 (incorporated by reference to Exhibit 1.1 to the Current Report on Form 8-K filed by the Issuer with the Commission on December 21, 2017).
3	Form of Series A Common Stock Purchase Warrant (incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K filed by the Issuer with the Commission on December 21, 2017).
4	Form of Series B Common Stock Purchase Warrant (incorporated by reference to Exhibit 4.2 to the Current Report on Form 8-K filed by the Issuer with the Commission on December 21, 2017).
5	Form of Securities Purchase Agreement, dated as of March 14, 2019, by and among Yield10 Bioscience, Inc. and the Investors (incorporated by reference to the Exhibit 10.1 to the Current Report on Form 8-K filed by the Issuer with the Commission on March 15, 2019).
6	Placement Agency Agreement, dated as of March 14, 2019, by and between Yield10 Bioscience, Inc. and Ladenburg Thalmann & Co. Inc. (incorporated by reference to the Exhibit 1.1 to the Current Report on Form 8-K filed by the Issuer with the Commission on March 15, 2019).

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: June 24, 2019

/s/ Jack W. Schuler

Jack W. Schuler

Dated: June 24, 2019

/s/ Renate Schuler

Renate Schuler

SCHULER FAMILY FOUNDATION

Dated: June 24, 2019

/s/ Jack W. Schuler

Name: Jack W. Schuler

Title: Director

JACK W. SCHULER LIVING TRUST

Dated: June 24, 2019

/s/ Jack W. Schuler

Name: Jack W. Schuler

Title: Trustee
