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

SCHEDULE 13D
Under the Securities Exchange Act of 1934
(Amendment No. 2)*

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)

July 3, 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 Rule 13d-1(e), 13d-1(f) or 13d-1(g), check the following box

* The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

1	NAME OF REPORTING PERSON I.R.S. IDENTIFICATION NO. OF ABOVE PERSON (ENTITIES ONLY) 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"/>
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 368,400 (1)(2)
	8 SHARED VOTING POWER 1,500,083 (1)(3)(4)(5)
	9 SOLE DISPOSITIVE POWER 368,400 (1)(2)
	10 SHARED DISPOSITIVE POWER 1,500,083 (1)(3)(4)(5)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,868,483 (1)(2)(3)(4)(5)
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (See Instructions)
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 47.6% (6)
14	TYPE OF REPORTING PERSON (See Instructions) IN

(1) The shares of the Issuer's Common Stock, par value \$0.01 per share ("Common Stock") reported herein give effect to the 1-for-10 reverse stock split which became effective on May 26, 2017 in accordance with the terms of the Certificate of Amendment to the Issuer's Restated Certificate of Incorporation filed with the Secretary of State of the State of Delaware on May 25, 2017 (the "2017 Reverse Stock Split").

- (2) Includes 149,835 shares of Common Stock underlying warrants exercisable at any time by Jack W. Schuler, the holder thereof.
- (3) Includes 149,835 shares of Common Stock underlying warrants exercisable at any time by the Schuler Family Foundation, the holder thereof.
- (4) Includes 160,392 shares of Common Stock underlying warrants exercisable on or after January 7, 2018 by the Jack W. Schuler Living Trust, the holder thereof.
- (5) Includes 25,000 shares of Common Stock underlying warrants exercisable on or after January 7, 2018 by Schuler Grandchildren LLC, the holder thereof.
- (6) Based on information provided by the Issuer, this percentage is calculated assuming that the total outstanding number of shares of Common Stock was 3,439,049 on July 7, 2017, after taking into account the closing of the July 2017 Offerings (as defined below).

1	NAME OF REPORTING PERSON I.R.S. IDENTIFICATION NO. OF ABOVE PERSON (ENTITIES ONLY)	
	Renate Schuler	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (See Instructions)	
	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 843 (1)
	8	SHARED VOTING POWER 1,128,249 (1)(2)
	9	SOLE DISPOSITIVE POWER 843 (1)
	10	SHARED DISPOSITIVE POWER 1,128,249 (1)(2)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,129,092 (1)(2)	
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) 31.5% (3)	
14	TYPE OF REPORTING PERSON (See Instructions) IN	

(1) The shares of Common Stock reported herein give effect to the 2017 Reverse Stock Split.

(2) Includes 149,835 shares of Common Stock underlying warrants exercisable at any time by the Schuler Family Foundation, the holder thereof.

(3) Based on information provided by the Issuer, this percentage is calculated assuming that the total outstanding number of shares of Common Stock was 3,439,049 on July 7, 2017, after taking into account the closing of the July 2017 Offerings (as defined below).

1	NAME OF REPORTING PERSON I.R.S. IDENTIFICATION NO. OF ABOVE PERSON (ENTITIES ONLY) Schuler Family Foundation EIN 36-4154510	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS (See Instructions) 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 1,128,249 (1)(2)
	8	SHARED VOTING POWER 0
	9	SOLE DISPOSITIVE POWER 1,128,249 (1)(2)
	10	SHARED DISPOSITIVE POWER 0
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,128,249 (1)(2)	
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) 31.4% (3)	
14	TYPE OF REPORTING PERSON (See Instructions) CO	

(1) The shares of Common Stock reported herein give effect to the 2017 Reverse Stock Split.

(2) Includes 149,835 shares of Common Stock underlying warrants exercisable at any time by the Schuler Family Foundation, the holder thereof.

(3) Based on information provided by the Issuer, this percentage is calculated assuming that the total outstanding number of shares of Common Stock was 3,439,049 on July 7, 2017, after taking into account the closing of the July 2017 Offerings (as defined below).

1	NAME OF REPORTING PERSON I.R.S. IDENTIFICATION NO. OF ABOVE PERSON (ENTITIES ONLY) 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"/>	
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 320,784 (1)(2)
	8	SHARED VOTING POWER 0
	9	SOLE DISPOSITIVE POWER 320,784 (1)(2)
	10	SHARED DISPOSITIVE POWER 0
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 320,784 (1)(2)	
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) 8.9% (3)	
14	TYPE OF REPORTING PERSON (See Instructions) OO	

(1) The shares of Common Stock reported herein give effect to the 2017 Reverse Stock Split.

(2) Includes 160,392 shares of Common Stock underlying warrants exercisable at any time on or after January 7, 2018 by the Jack W. Schuler Living Trust, the holder thereof.

(3) Based on information provided by the Issuer, this percentage is calculated assuming that the total outstanding number of shares of Common Stock was 3,439,049 on July 7, 2017, after taking into account the closing of the July 2017 Offerings (as defined below).

Explanatory Note

This Amendment No. 2 (this “Amendment No. 2”) 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 (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. Pursuant to the Amended and Restated Joint Filing Agreement dated as of August 1, 2017 and filed as Exhibit 1 hereto, the Jack W. Schuler Living Trust is being added in this Amendment No. 2 as an additional Reporting Person (together with Jack W. Schuler, Renate Schuler and Schuler Family Foundation, the “Reporting Persons”). Except as amended or supplemented in this Amendment No. 2, all other information in the Schedule 13D is as set forth previously. Capitalized terms used in this Amendment No. 2 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 “Issuer”). The principal executive office of the Issuer is 19 Presidential Way, Woburn, MA 01801.

Item 2. Identity and Background.

(a), (b), (c) and (f) The Jack W. Schuler Living Trust is being added in this Amendment No. 2 as an additional Reporting Person (together with Jack W. Schuler, Renate Schuler and Schuler Family Foundation). The Jack W. Schuler Living Trust is an Illinois trust. Its principal business is investing in securities and the address of its principal office is 100 N. Field Drive, Suite 360, Lake Forest, IL 60045. The address for each of the Reporting Persons is 100 N. Field Drive, Suite 360, Lake Forest, IL 60045.

(d) During the last five years, the Jack W. Schuler Living Trust has not been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors).

(e) During the last five years, the Jack W. Schuler Living Trust has not been a party to a civil proceeding of a judicial or administrative body of competent jurisdiction and as a result of such proceeding been 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.

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

The information set forth in Item 4 hereof is hereby incorporated by reference into this Item 3, as applicable.

Item 4. Purpose of Transaction.

July 2017 Securities Purchase Agreement

On July 3, 2017, the Issuer entered into a Securities Purchase Agreement (the “Purchase Agreement”) with certain investors named therein (the “Investors”), including the Jack W. Schuler Living Trust and Schuler Grandchildren LLC, an Illinois limited liability company, pursuant to which the Issuer agreed to issue and sell, in a registered public offering by the Issuer directly to the Investors (the “Public Offering”), an aggregate of 570,784 shares (the “Shares”) of Common Stock, at an offering price of \$4.00 per share for gross proceeds of approximately \$2.3 million before deducting the placement agent fee and related offering expenses. The Shares were offered by the

Issuer pursuant to a registration statement on Form S-3 (File No. 333-217051), which was filed with the SEC on March 30, 2017 and declared effective on April 12, 2017.

In a concurrent private placement (the “Private Placement” and together with the Public Offering, the “July 2017 Offerings”), the Issuer agreed to issue to the Investors who participated in the Public Offering warrants (the “Warrants” and collectively with the Shares, the “Securities”) exercisable for one share of Common Stock for each Share purchased in the Public Offering for an aggregate of 570,784 shares of Common Stock at an exercise price of \$5.04 per share. Each Warrant will be exercisable beginning on the six-month anniversary of the date of its issuance and will expire six years from the date it becomes exercisable.

Under the terms of the Purchase Agreement, (i) Jack W. Schuler Living Trust received 160,392 shares of Common Stock and 160,392 Warrants in exchange for the payment of an aggregate purchase price of \$641,568 and (ii) Schuler Grandchildren LLC received 25,000 shares of Common Stock and 25,000 Warrants in exchange for the payment of an aggregate purchase price of \$100,000. Jack W. Schuler, a Reporting Person, has the power to vote or to direct the vote of and to dispose of or to direct the disposition of the Securities held by Schuler Grandchildren LLC.

Additional Disclosure

Jack W. Schuler and the Jack W. Schuler Living Trust intend to hold 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 1,869,326 shares of Common Stock for which this Schedule 13D is filed consist of (i) 368,400 shares of Common Stock owned by Jack W. Schuler (including 149,835 shares of Common Stock underlying warrants), representing approximately 10.3% of the shares of the Common Stock of the Issuer outstanding, (ii) 843 shares owned by Renate Schuler, representing less than 0.1% of the shares of the Common Stock of the Issuer outstanding, (iii) 1,128,249 shares owned by the Schuler Family Foundation (including 149,835 shares of Common Stock underlying warrants), representing approximately 31.4% of the shares of the Common Stock of the Issuer outstanding, (iv) 320,784 shares owned by the Jack W. Schuler Living Trust (including 160,392 shares of Common Stock underlying warrants), representing approximately 8.9% of the shares of the Common Stock of the Issuer outstanding and (v) 51,050 shares owned by Schuler Grandchildren LLC (including 25,000 shares of Common Stock underlying warrants), representing approximately 1.5% 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, (ii) the 1,128,249 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 and (iii) the 51,050 shares owned by Schuler Grandchildren LLC, an Illinois limited liability company of which Mr. Schuler is the sole manager. Ms. Schuler disclaims beneficial ownership in the 1,128,249 shares owned by the Schuler Family Foundation.

(b)

Jack W. Schuler:

- (i) Sole power to vote or to direct the vote: 368,400
- (ii) Shared power to vote or direct the vote: 1,500,083
- (iii) Sole power to dispose or to direct the disposition of: 368,400
- (iv) Shared power to dispose of to direct the disposition of: 1,500,083

Renate Schuler:

- (i) Sole power to vote or to direct the vote: 843
- (ii) Shared power to vote or direct the vote: 1,128,249
- (iii) Sole power to dispose or to direct the disposition of: 843
- (iv) Shared power to dispose of to direct the disposition of: 1,128,249

The Schuler Family Foundation:

- (i) Sole power to vote or to direct the vote: 1,128,249
- (ii) Shared power to vote or direct the vote: 0
- (iii) Sole power to dispose or to direct the disposition of: 1,128,249
- (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: 320,784
- (ii) Shared power to vote or direct the vote: 0
- (iii) Sole power to dispose or to direct the disposition of: 320,784
- (iv) Shared power to dispose of to direct the disposition of: 0

(c)

Except as set forth in this Amendment No. 2, 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	Joint Filing Agreement, dated as of August 29, 2014, by and among Jack W. Schuler, Renate Schuler and the Schuler Family Foundation (incorporated by reference to the Schedule 13D filed by the Reporting Persons on August 29, 2014).
2	Securities Purchase Agreement dated August 4, 2014 among Metabolix, Inc. and the investors named therein (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by the Issuer with the SEC on August 4, 2014).
3	Amended and Restated Letter Agreement, dated August 4, 2014 among Metabolix, Inc., Jack W. Schuler, Renate Schuler and the Schuler Family Foundation (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by the Issuer with the SEC on August 4, 2014).
4	Securities Purchase Agreement dated June 15, 2015 among Metabolix, Inc. and the investors named therein (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by the Issuer with the SEC on June 17, 2015).
5	Standstill Agreement, dated June 19, 2015 among Metabolix, Inc., Jack W. Schuler, Renate Schuler and the Schuler Family Foundation (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by the Issuer with the SEC on June 17, 2015).
6	Securities Purchase Agreement dated July 3, 2017 among Yield10 Bioscience, Inc. and the investors named therein (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by the Issuer with the SEC on July 5, 2017).
7	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 (filed herewith as Exhibit 1 hereto).

SIGNATURE

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

Dated: August 1, 2017

/s/ Jack W. Schuler

Jack W. Schuler

Dated: August 1, 2017

/s/ Renate Schuler

Renate Schuler

SCHULER FAMILY FOUNDATION

Dated: August 1, 2017

By: /s/ Jack W. Schuler

Name: Jack W. Schuler

Title: Director

JACK W. SCHULER LIVING TRUST

Dated: August 1, 2017

By: s/ Jack W. Schuler

Name: Jack W. Schuler

Title: Trustee

Amended and Restated Joint Filing Agreement

This Amended and Restated Joint Filing Agreement is entered into as of August 1, 2017, by the undersigned, superseding the Joint Filing Agreement entered into as of August 29, 2014 by Jack W. Schuler, Renate Schuler and the Schuler Family Foundation. The undersigned hereby agree that this Amendment No. 2 to Schedule 13D with respect to the shares of the common stock, par value \$0.01 per share, of Yield10 Bioscience, Inc., a Delaware corporation, is, and any amendment subsequently signed by each of the undersigned shall be, filed on behalf of each of the undersigned pursuant to and in accordance with the provisions of Rule 13d-1(k) under the Securities Exchange Act of 1934, as amended.

/s/ Jack W. Schuler

Jack W. Schuler

/s/ Renate Schuler

Renate Schuler

SCHULER FAMILY FOUNDATION

By: /s/ Jack W. Schuler

Jack W. Schuler, Director

JACK W. SCHULER LIVING TRUST

By: /s/ Jack W. Schuler

Jack W. Schuler, Trustee