MEDIFAST INC Form SC 13G/A February 14, 2017

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

SCHEDULE 13G

Under the Securities Exchange Act of 1934 (Amendment No. 1)\*

	Medifast, Inc.	
	(Name of Issuer)	
	common stock, par value	\$.001 per share
	itle of Class of Securities)	
	58470Н101	
	(CUSIP Number) December 30, 201	6
(Date of Ev	ent Which Requires Filing of	this Statement)
Check the appropriate box t Schedule is filed:	o designate the rule pursuant	to which this
[X] Rule 13d-1(b)		
[_] Rule 13d-1(c)		
[_] Rule 13d-1(d)		
initial filing on this for	er page shall be filled out form with respect to the subject andment containing information n a prior cover page.	class of securities,
deemed to be "filed" for th Act of 1934 ("Act") or othe	the remainder of this cover e purpose of Section 18 of th rwise subject to the liabilit ject to all other provisions	e Securities Exchange ies of that section
CUSIP NO. 58470H101	13G	Page 2 of 8 Pages
(1) NAMES OF REPORTING PE I.R.S. IDENTIFICATIO	RSONS. N NOS. OF ABOVE PERSONS (enti	ties only).
Renaissance Technolog	ies LLC 26-0385758	
(2) CHECK THE APPROPRIATE (a) [_]	BOX IF A MEMBER OF A GROUP (S	EE INSTRUCTIONS):

	(b) [_]			
(3)	SEC USE ONLY			
(4)	CITIZENSHIP OR PLACE OF ORG	GANIZATION		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:			(5)	SOLE VOTING POWER 951,500
			(6)	SHARED VOTING POWER 0
			(7)	SOLE DISPOSITIVE POWER 951,500
			(8)	SHARED DISPOSITIVE POWER
(9)	AGGREGATE AMOUNT BENEFICIA	ALLY OWNED BY EACH	I REI	PORTING PERSON
(10)	CHECK BOX IF THE AGGREGATE (SEE INSTRUCTIONS)	E AMOUNT IN ROW (9	) E	CLUDES CERTAIN SHARES
(11)	PERCENT OF CLASS REPRESE	TED BY AMOUNT IN	ROW	(9)
	8	3.03 %		
(12)	TYPE OF REPORTING PERSON IA	(SEE INSTRUCTIONS)		
		Page 2 of 8 page		
		Page 3 of 8 page	es	
	IP NO. 58470H101	13G		Page 3 of 8 Page
(1)	NAMES OF REPORTING PERSONS	5.		
	RENAISSANCE TECHNOLOGIES H	HOLDINGS CORPORATI	ON	13-3127734
(2)	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)  (a) [_]  (b) [_]			
(3)	SEC USE ONLY			

(4) CITIZENSHIP OR PLACE OF ORG.	ANIZATION
Delaware	
	(5) SOLE VOTING POWER
NUMBER OF SHARES BENEFICIALLY OWNED	951,500
BY EACH REPORTING PERSON WITH:	(6) SHARED VOTING POWER
	0
	(7) SOLE DISPOSITIVE POWER
	951,500
	(8) SHARED DISPOSITIVE POWER
	0
	LLY OWNED BY EACH REPORTING PERSON
9	51,500
(10) CHECK BOX IF THE AGGREGATE (SEE INSTRUCTIONS)	AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES
(11) PERCENT OF CLASS REPRESEN	TED BY AMOUNT IN ROW (9)
8	.03 %
(12) TYPE OF REPORTING PERSON (	
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CUSIP NO. 58470H101	13G Page 4 of 8 Pages
 Item 1.	
(a) Name of Issuer	
Medifast, Inc.	
(b) Address of Issuer's Pri	ncipal Executive Offices.
3600 Crondall Lane, Ow	ings Mills, Maryland 21117
Item 2.	
(a) Name of Person Filing:	
	eing filed by Renaissance Technologies LLC e Technologies Holdings Corporation ("RTHC").

(b) Address of Principal Business Office or, if none, Residence.

The principal business address of the reporting persons is:

800 Third Avenue New York, New York 10022

(c) Citizenship.

RTC is a Delaware limited liability company, and RTHC is a Delaware corporation.

(d) Title of Class of Securities.

common stock, par value \$.001 per share

(e) CUSIP Number.

58470H101

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- Item 3. If this statement is filed pursuant to Rule 13d-1(b) or 13-d-2(b) or (c), check whether the person filing is a:
- (a) [\_] Broker or dealer registered under section 15 of the Act.
- (b) [\_] Bank as defined in section 3(a)(6) of the Act.
- (c) [\_] Insurance Company as defined in section 3(a)(19) of the Act.
- (d) [\_] Investment Company registered under section 8 of the Investment Company Act.
- (e) [x] Investment Adviser in accordance with Sec.240.13d-1(b) (1) (ii) (E).
- (f) [\_] Employee Benefit Plan or Endowment Fund in accordance with Sec. 240.13d-1 (b) (1) (ii) (F).
- (g) [\_] Parent holding company, in accordance with Sec.240.13d-1 (b) (1) (ii) (G).
- (h) [\_] A savings associations as defined in Section 3(b) of the Federal Deposit Insurance Act.
- (i) [\_] A church plan that is excluded from the definition of an investment company under section 3(c)(14) of the Investment Company Act of 1940.
- (j)  $[\_]$  Group, in accordance with Sec.240.13d-1(b)(1)(ii)(J).
- Item 4. Ownership.
  - (a) Amount beneficially owned.

RTC: 951,500 shares

RTHC: 951,500 shares, comprising the shares beneficially owned by RTHC, because of RTHC's majority ownership of RTC.

(b) Percent of Class.

RTC: 8.03 % RTHC: 8.03 %

- (c) Number of shares as to which the person has:
  - (i) sole power to vote or to direct the vote:

RTC: 951,500 RTHC: 951,500

(ii) Shared power to vote or to direct the vote: 0

(iii) sole power to dispose or to direct the disposition of:

RTC: 951,500 RTHC: 951,500

(iv) Shared power to dispose or to direct the disposition of:

RTC: 0 RTHC: 0

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\_\_\_\_\_\_

Item 5. Ownership of Five Percent or Less of a Class.

If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following: [\_]

Item 6. Ownership of More than Five Percent on Behalf of Another Person.

Certain funds and accounts managed by RTC have the right to receive dividends and proceeds from the sale of the securities which are the subject of this report.

Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on by the Parent Holding Company.

Not applicable

Item 8. Identification and Classification of Members of the Group.

Not applicable

Item 9. Notice of Dissolution of a Group.

Not applicable

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Item 10. Certification

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were acquired and are held in the ordinary course of business and not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect.

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.

Date: February 14, 2017

Renaissance Technologies LLC

By: Mark Silber

Executive Vice President

Renaissance Technologies Holdings Corporation

By: Mark Silber Vice President

Attention: Intentional misstatements or omissions of fact constitute Federal criminal violations (See  $18\ U.S.C.\ 1001$ ).

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EXHIBIT 99.1

AGREEMENT REGARDING JOINT FILING

UNDER RULE 13D-1(K) OF THE EXCHANGE ACT

In accordance with Rule 13d-1(k) under the Securities Exchange Act of 1934, as amended, each of the undersigned agrees to the filing on behalf of each of a Statement on Schedule 13G, and all amendments thereto, with respect to the shares of common stock, par value \$.001 per share of Medifast, Inc.

Date: February 14, 2017

Renaissance Technologies LLC

By: Mark Silber

Executive Vice President

Renaissance Technologies Holdings Corporation

By: Mark Silber Vice President

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