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SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

Schedule 13G

INFORMATION TO BE INCLUDED IN STATEMENTS FILED PURSUANT TO RULES 13d-1 (b), (c) AND (d)  
AND AMENDMENTS THERETO FILED PURSUANT TO 13d-2 (b)  
(Amendment No. 5)\*

**Intermolecular, Inc.**

(Name of Issuer)

Common Stock

(Title of Class of Securities)

45882D109

(CUSIP Number)

December 31, 2017

(Date of Event Which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- Rule 13d-1(b)  
 Rule 13d-1(c)  
 Rule 13d-1(d)

\*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).

(Continued on following pages)

Page 1 of 17 Pages  
Exhibit Index Contained on Page 15

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1	NAME OF REPORTING SS OR I.R.S. IDENTIFICATION NO. OF ABOVE PERSON  U.S. Venture Partners IX, L.P. ("USVP IX")	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP*  (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION  Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER  4,280,779 shares; except that Presidio Management Group IX, L.L.C. ("PMG IX"), the general partner of USVP IX, may be deemed to have sole power to vote such shares, and Irwin Federman ("Federman"), Steven M. Krausz ("Krausz"), David Liddle ("Liddle"), Paul Matteucci ("Matteucci"), Jonathan D. Root ("Root"), Casey M. Tansey ("Tansey") and Philip M. Young ("Young"), the managing members of PMG IX, may be deemed to have shared power to vote such shares.
	6	SHARED VOTING POWER  See response to row 5.
	7	SOLE DISPOSITIVE POWER  4,280,779 shares; except that PMG IX, the general partner of USVP IX, may be deemed to have the sole power to dispose of such shares, and Federman, Krausz, Liddle, Matteucci, Root, Tansey and Young, the managing members of PMG IX, may be deemed to have shared power to dispose of such shares.
	8	SHARED DISPOSITIVE POWER  See response to row 7.
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON	4,280,779
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES*	<input type="checkbox"/>
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9	8.6%
12	TYPE OF REPORTING PERSON*	PN

1	NAME OF REPORTING SS OR I.R.S. IDENTIFICATION NO. OF ABOVE PERSON  Presidio Management Group IX, L.L.C.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP*  (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION  Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER  4,280,779 shares, all of which are directly owned by USVP IX. PMG IX, the general partner of USVP IX, may be deemed to have sole power to vote such shares, and Federman, Krausz, Liddle, Root, Tansey, Matteucci and Young, the managing members of PMG IX, may be deemed to have shared power to vote such shares.
	6	SHARED VOTING POWER  See response to row 5.
	7	SOLE DISPOSITIVE POWER  4,280,779 shares, all of which are directly owned by USVP IX. PMG IX, the general partner of USVP IX, may be deemed to have sole power to dispose of such shares, and Federman, Krausz, Liddle, Root, Tansey, Matteucci and Young, the managing members of PMG IX, may be deemed to have shared power to dispose of such shares.
	8	SHARED DISPOSITIVE POWER  See response to row 7.
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON	4,280,779
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES*	<input type="checkbox"/>
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9	8.6%
12	TYPE OF REPORTING PERSON*	OO

1	NAME OF REPORTING PERSON Irwin Federman	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION U.S. Citizen	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER 535,897 shares, of which 80,000 are issuable pursuant to outstanding options exercisable within 60 days of December 31, 2017.
	6	SHARED VOTING POWER 4,280,779 shares, all of which are directly owned by USVP IX. PMG IX is the general partner of USVP IX. Federman, a managing member of PMG IX, may be deemed to have shared power to vote such shares.
	7	SOLE DISPOSITIVE POWER 535,897 shares, of which 80,000 are issuable pursuant to outstanding options exercisable within 60 days of December 31, 2017.
	8	SHARED DISPOSITIVE POWER 4,280,779 shares, all of which are directly owned by USVP IX. PMG IX is the general partner of USVP IX. Federman, a managing member of PMG IX, may be deemed to have shared power to dispose of such shares.
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON	4,816,676
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES*	<input type="checkbox"/>
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9	9.7%
12	TYPE OF REPORTING PERSON*	IN

1	NAME OF REPORTING PERSON Steven M. Krausz	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION U.S. Citizen	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER 0 shares.
	6	SHARED VOTING POWER 4,280,779 shares, all of which are directly owned by USVP IX. PMG IX is the general partner of USVP IX. Krausz, a managing member of PMG IX, may be deemed to have shared power to vote such shares.
	7	SOLE DISPOSITIVE POWER 0 shares.
	8	SHARED DISPOSITIVE POWER 4,280,779 shares, all of which are directly owned by USVP IX. PMG IX is the general partner of USVP IX. Krausz, a managing member of PMG IX, may be deemed to have shared power to dispose of such shares.
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON	4,280,779
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES*	<input type="checkbox"/>
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9	8.6%
12	TYPE OF REPORTING PERSON*	IN

1	NAME OF REPORTING PERSON David Liddle	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION U.S. Citizen	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER 0 shares.
	6	SHARED VOTING POWER 4,280,779 shares, all of which are directly owned by USVP IX. PMG IX is the general partner of USVP IX. Liddle, a managing member of PMG IX, may be deemed to have shared power to vote such shares.
	7	SOLE DISPOSITIVE POWER 0 shares.
	8	SHARED DISPOSITIVE POWER 4,280,779 shares, all of which are directly owned by USVP IX. PMG IX is the general partner of USVP IX. Liddle, a managing member of PMG IX, may be deemed to have shared power to dispose of such shares.
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON	4,280,779
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES*	<input type="checkbox"/>
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9	8.6%
12	TYPE OF REPORTING PERSON*	IN

1	NAME OF REPORTING PERSON Paul Matteucci	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION U.S. Citizen.	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER 0 shares.
	6	SHARED VOTING POWER 4,280,779 shares, all of which are directly owned by USVP IX. PMG IX is the general partner of USVP IX. Matteucci, a managing member of PMG IX, may be deemed to have shared power to vote such shares.
	7	SOLE DISPOSITIVE POWER 0 shares.
	8	SHARED DISPOSITIVE POWER 4,280,779 shares, all of which are directly owned by USVP IX. PMG IX is the general partner of USVP IX. Matteucci, a managing member of PMG IX, may be deemed to have shared power to dispose of such shares.
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON	4,280,779
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES*	<input type="checkbox"/>
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9	8.6%
12	TYPE OF REPORTING PERSON*	IN

1	NAME OF REPORTING PERSON Jonathan D. Root	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION U.S. Citizen	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER 0 shares.
	6	SHARED VOTING POWER 4,280,779 shares, all of which are directly owned by USVP IX. PMG IX is the general partner of USVP IX. Root, a managing member of PMG IX, may be deemed to have shared power to vote such shares.
	7	SOLE DISPOSITIVE POWER 0 shares.
	8	SHARED DISPOSITIVE POWER 4,280,779 shares, all of which are directly owned by USVP IX. PMG IX is the general partner of USVP IX. Root, a managing member of PMG IX, may be deemed to have shared power to dispose of such shares.
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON	4,280,779
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES*	<input type="checkbox"/>
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9	8.6%
12	TYPE OF REPORTING PERSON*	IN



1	NAME OF REPORTING PERSON Casey M. Tansey	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION U.S. Citizen	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER 0 shares.
	6	SHARED VOTING POWER 4,280,779 shares, all of which are directly owned by USVP IX. PMG IX is the general partner of USVP IX. Tansey, a managing member of PMG IX, may be deemed to have shared power to vote such shares.
	7	SOLE DISPOSITIVE POWER 0 shares.
	8	SHARED DISPOSITIVE POWER 4,280,779 shares, all of which are directly owned by USVP IX. PMG IX is the general partner of USVP IX. Tansey, a managing member of PMG IX, may be deemed to have shared power to dispose of such shares.
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON	4,280,779
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES*	<input type="checkbox"/>
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9	8.6%
12	TYPE OF REPORTING PERSON*	IN

1	NAME OF REPORTING PERSON Philip M. Young	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION U.S. Citizen	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER 0 shares.
	6	SHARED VOTING POWER 4,280,779 shares, all of which are directly owned by USVP IX. PMG IX is the general partner of USVP IX. Young, a managing member of PMG IX, may be deemed to have shared power to vote such shares.
	7	SOLE DISPOSITIVE POWER 0 shares.
	8	SHARED DISPOSITIVE POWER 4,280,779 shares, all of which are directly owned by USVP IX. PMG IX is the general partner of USVP IX. Young, a managing member of PMG IX, may be deemed to have shared power to dispose of such shares.
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON	4,280,779
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES*	<input type="checkbox"/>
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9	8.6%
12	TYPE OF REPORTING PERSON*	IN

This Amendment No. 5 amends and restates in its entirety the Schedule 13G previously filed by Presidio Management Group IX, L.L.C., a Delaware limited liability company ("PMG IX"), U.S. Venture Partners IX, L.P., a Delaware limited partnership ("USVP IX"), Irwin Federman ("Federman"), Steven M. Krausz ("Krausz"), David Liddle ("Liddle"), Paul Matteucci ("Matteucci"), Jonathan D. Root ("Root") Casey M. Tansey ("Tansey") and Philip M. Young ("Young") (together with all prior and current amendments thereto, this "Schedule 13G").

ITEM 1(A). NAME OF ISSUER

Intermolecular, Inc.

ITEM 1(B). ADDRESS OF ISSUER'S PRINCIPAL EXECUTIVE OFFICES

3011 N. First Street  
San Jose, California 95134

ITEM 2(A). NAME OF PERSONS FILING

This Schedule 13G is filed by PMG IX, USVP IX, Federman, Krausz, Liddle, Matteucci, Root, Tansey and Young. The foregoing entities and individuals are collectively referred to as the "Reporting Persons."

PMG IX, the general partner of USVP IX, may be deemed to have sole power to vote and sole power to dispose of shares of the issuer directly owned by USVP IX. Federman, Krausz, Liddle, Matteucci, Root, Tansey and Young are managing members of PMG IX and may be deemed to have shared power to vote and shared power to dispose of shares of the issuer directly owned by USVP IX.

ITEM 2(B). ADDRESS OF PRINCIPAL OFFICE

The address for each of the Reporting Persons is:

U.S. Venture Partners  
1460 El Camino Real, Suite 100  
Menlo Park, California 94025

ITEM 2(C). CITIZENSHIP

USVP IX is a Delaware limited partnership. PMG IX is a Delaware limited liability company. Federman, Krausz, Liddle, Matteucci, Root, Tansey and Young are United States citizens.

ITEM 2(D) AND (E). TITLE OF CLASS OF SECURITIES AND CUSIP NUMBER

Common Stock

CUSIP # 45882D109

ITEM 3. Not Applicable.

ITEM 4. OWNERSHIP

Provide the following information regarding the aggregate number and percentage of the class of securities of the issuer identified in Item 1.

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- (a) Amount beneficially owned:  
See Row 9 of cover page for each Reporting Person.
- (b) Percent of Class:  
See Row 11 of cover page for each Reporting Person.
- (c) Number of shares as to which such person has:
  - (i) Sole power to vote or to direct the vote:  
See Row 5 of cover page for each Reporting Person.
  - (ii) Shared power to vote or to direct the vote:  
See Row 6 of cover page for each Reporting Person.
  - (iii) Sole power to dispose or to direct the disposition of:  
See Row 7 of cover page for each Reporting Person.
  - (iv) Shared power to dispose or to direct the disposition of:  
See Row 8 of cover page for each Reporting Person.

ITEM 5. OWNERSHIP OF FIVE PERCENT OR LESS OF A CLASS

Not applicable.

ITEM 6. OWNERSHIP OF MORE THAN FIVE PERCENT ON BEHALF OF ANOTHER PERSON.

Under certain circumstances set forth in the limited partnership agreement of USVP IX and the limited liability company agreement of PMG IX, the general and limited partners or members, as the case may be, of each of such entities may be deemed to have the right to receive dividends from, or the proceeds from, the sale of shares of the issuer owned by each such entity of which they are a partner or member, as the case may be.

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 GROUP.

Not applicable.

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ITEM 10. CERTIFICATION.

Not applicable.

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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 31, 2018

PRESIDIO MANAGEMENT GROUP IX, L.L.C.

U.S. VENTURE PARTNERS IX, L.P.  
By Presidio Management Group IX, L.L.C.  
Its General Partner

IRWIN FEDERMAN

STEVEN M. KRAUSZ

DAVID LIDDLE

PAUL MATTEUCCI

JONATHAN D. ROOT

CASEY M. TANSEY

PHILIP M. YOUNG

By: /s/ Dale Holladay  
Dale Holladay, Chief Financial Officer/Attorney-In-Fact for the above-listed entities

By: /s/ Dale Holladay  
Dale Holladay, Attorney-In-Fact for the above-listed individuals

\*Signed pursuant to a Power of Attorney already on file with the appropriate agencies.

The original statement shall be signed by each person on whose behalf the statement is filed or his authorized representative. If the statement is signed on behalf of a person by his authorized representative other than an executive officer or general partner of the filing person, evidence of the representative's authority to sign on behalf of such person shall be filed with the statement, provided, however, that a power of attorney for this purpose which is already on file with the Commission may be incorporated by reference. The name and any title of each person who signs the statement shall be typed or printed beneath his signature.

*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 for whom copies are to be sent.

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

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EXHIBIT INDEX

<u>Exhibit</u>	<u>Found on Sequentially Numbered Page</u>
Exhibit A: Agreement of Joint Filing	16
Exhibit B: Power of Attorney	17

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EXHIBIT AAgreement of Joint Filing

The Reporting Persons agree that a single Schedule 13G (or any amendment thereto) relating to the Common Stock of Intermolecular, Inc. shall be filed on behalf of each of the Reporting Persons. Note that copies of the applicable Agreement of Joint Filing are already on file with the appropriate agencies.

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EXHIBIT B

Power of Attorney

Dale Holladay has signed this Schedule 13G as Attorney-In-Fact. Note that copies of the applicable Power of Attorney are already on file with the appropriate agencies.

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