

INITIAL STATEMENT OF BENEFICIAL OWNERSHIP OF SECURITIES

OMB APPROVAL

OMB Number: 3235-0104

Estimated average burden

hours per response: 0.5

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934
or Section 30(h) of the Investment Company Act of 1940

1. Name and Address of Reporting Person* <u>KIRK RANDAL J</u> (Last) (First) (Middle) <u>C/O THIRD SECURITY, LLC</u> <u>1881 GROVE AVENUE</u> (Street) <u>RADFORD VA 24141</u> (City) (State) (Zip)	2. Date of Event Requiring Statement (Month/Day/Year) 08/07/2013	3. Issuer Name and Ticker or Trading Symbol <u>INTREXON CORP [XON]</u> 4. Relationship of Reporting Person(s) to Issuer (Check all applicable) <input checked="" type="checkbox"/> Director <input checked="" type="checkbox"/> 10% Owner <input checked="" type="checkbox"/> Officer (give title below) Other (specify below) <p style="text-align: center;"><u>Chief Executive Officer</u></p>	5. If Amendment, Date of Original Filed (Month/Day/Year) 6. Individual or Joint/Group Filing (Check Applicable Line) <input checked="" type="checkbox"/> Form filed by One Reporting Person Form filed by More than One Reporting Person
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Table I - Non-Derivative Securities Beneficially Owned

1. Title of Security (Instr. 4)	2. Amount of Securities Beneficially Owned (Instr. 4)	3. Ownership Form: Direct (D) or Indirect (I) (Instr. 5)	4. Nature of Indirect Beneficial Ownership (Instr. 5)
Common Stock	1,531,866	I	by NRM V ⁽⁹⁾
Common Stock	843,432	I	by NRM VI Holdings ⁽⁹⁾

Table II - Derivative Securities Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security (Instr. 4)	2. Date Exercisable and Expiration Date (Month/Day/Year)		3. Title and Amount of Securities Underlying Derivative Security (Instr. 4)		4. Conversion or Exercise Price of Derivative Security	5. Ownership Form: Direct (D) or Indirect (I) (Instr. 5)	6. Nature of Indirect Beneficial Ownership (Instr. 5)
	Date Exercisable	Expiration Date	Title	Amount or Number of Shares			
Series D Convertible Preferred Stock	(1)	(1)	Common Stock	2,316,448	(1)	I	by R.J. Kirk DOT ⁽⁹⁾
Series D Convertible Preferred Stock	(1)	(1)	Common Stock	2,535,925	(1)	I	by NRM VI Holdings ⁽⁹⁾
Series D Convertible Preferred Stock	(1)	(1)	Common Stock	43,336	(1)	I	by JPK 2008 ⁽⁹⁾
Series D Convertible Preferred Stock	(1)	(1)	Common Stock	206,751	(1)	I	by JPK 2009 ⁽⁹⁾
Series D Convertible Preferred Stock	(1)	(1)	Common Stock	633,600	(1)	I	by JPK 2012 ⁽⁹⁾
Series D Convertible Preferred Stock	(1)	(1)	Common Stock	44,239	(1)	I	by MGK 2008 ⁽⁹⁾
Series D Convertible Preferred Stock	(1)	(1)	Common Stock	225,711	(1)	I	by MGK 2009 ⁽⁹⁾
Series D Convertible Preferred Stock	(1)	(1)	Common Stock	500,457	(1)	I	by MGK 2011 ⁽⁹⁾
Series D Convertible Preferred Stock	(1)	(1)	Common Stock	26,888	(1)	I	by ZSK 2008 ⁽⁹⁾
Series D Convertible Preferred Stock	(1)	(1)	Common Stock	29,088	(1)	I	by ZSK 2009 ⁽⁹⁾
Series D Convertible Preferred Stock	(1)	(1)	Common Stock	101,859	(1)	I	by Kellie L. Banks LTT ⁽⁹⁾
Series C-3 Convertible Preferred stock	(2)	(2)	Common Stock	7,583,586	(2)	I	by NRM VI Holdings ⁽⁹⁾
Series C-2 Convertible Preferred stock	(3)	(3)	Common Stock	10,638,297	(3)	I	by NRM V ⁽⁹⁾
Series C-1 Convertible Preferred stock	(4)	(4)	Common Stock	9,105,444	(4)	I	by NRM V ⁽⁹⁾
Series C Convertible Preferred stock	(5)	(5)	Common Stock	169,061	(5)	I	by ADC 2010 ⁽⁹⁾
Series C Convertible Preferred stock	(5)	(5)	Common Stock	36,742	(5)	I	by JPK 2009 ⁽⁹⁾
Series C Convertible Preferred stock	(5)	(5)	Common Stock	62,400	(5)	I	by JPK 2012 ⁽⁹⁾
Series C Convertible Preferred stock	(5)	(5)	Common Stock	10,031	(5)	I	by Kellie L. Banks LTT ⁽⁹⁾
Series C Convertible Preferred stock	(5)	(5)	Common Stock	36,742	(5)	I	by MGK 2009 ⁽⁹⁾
Series C Convertible Preferred stock	(5)	(5)	Common Stock	49,257	(5)	I	by MGK 2011 ⁽⁹⁾

**Table II - Derivative Securities Beneficially Owned
(e.g., puts, calls, warrants, options, convertible securities)**

1. Title of Derivative Security (Instr. 4)	2. Date Exercisable and Expiration Date (Month/Day/Year)		3. Title and Amount of Securities Underlying Derivative Security (Instr. 4)		4. Conversion or Exercise Price of Derivative Security	5. Ownership Form: Direct (D) or Indirect (I) (Instr. 5)	6. Nature of Indirect Beneficial Ownership (Instr. 5)
	Date Exercisable	Expiration Date	Title	Amount or Number of Shares			
Series C Convertible Preferred stock	(5)	(5)	Common Stock	1,130,094	(5)	I	by NRM IV ⁽⁹⁾
Series C Convertible Preferred stock	(5)	(5)	Common Stock	519,584	(5)	I	by NewVa ⁽⁹⁾
Series C Convertible Preferred stock	(5)	(5)	Common Stock	375,266	(5)	I	by R.J. Kirk DOT ⁽⁹⁾
Series C Convertible Preferred stock	(5)	(5)	Common Stock	168,865	(5)	I	by Staff 2001 ⁽⁹⁾
Series B-1 Convertible Preferred stock	(6)	(6)	Common Stock	692,777	(6)	I	by NewVa ⁽⁹⁾
Series B Convertible Preferred stock	(7)	(7)	Common Stock	396,571	(7)	I	by NewVa ⁽⁹⁾
Option to Purchase Common Stock	(8)	02/20/2018	Common Stock	8,571	2.74	D	
Option to Purchase Common Stock	(8)	02/20/2019	Common Stock	2,857	3.29	D	

Explanation of Responses:

- The Series D Convertible Preferred Stock is convertible into Common Stock on a 1-for-1.75 basis into the number of shares of Common Stock as shown in column 3 at any time at the holder's election, and automatically upon (i) the closing of the Issuer's firm commitment underwritten initial public offering in the event it results in net proceeds of at least \$100,000,000 and (ii) upon the election of the holders of a majority of the then outstanding shares of such series. Upon conversion, all dividends that have accrued with respect to the Series D Preferred Stock will convert into shares of Common Stock at the then current fair market value. The Series D Convertible Preferred Stock has no expiration date.
- The Series C-3 Convertible Preferred Stock is convertible into Common Stock on a 1-for-1.75 basis into the number of shares of Common Stock as shown in column 3 at any time at the holder's election, and automatically upon (i) the closing of the Issuer's firm commitment underwritten initial public offering in the event it results in net proceeds of at least \$100,000,000 and (ii) upon the election of the holders of a majority of the then outstanding shares of such series. Upon conversion, all dividends that have accrued with respect to the Series C-3 Preferred Stock will convert into shares of Common Stock at the then current fair market value. The Series C-3 Convertible Preferred Stock has no expiration date.
- The Series C-2 Convertible Preferred Stock is convertible into Common Stock on a 1-for-1.75 basis into the number of shares of Common Stock as shown in column 3 at any time at the holder's election, and automatically upon (i) the closing of the Issuer's firm commitment underwritten initial public offering in the event it results in net proceeds of at least \$100,000,000 and (ii) upon the election of the holders of a majority of the then outstanding shares of such series. Upon conversion, all dividends that have accrued with respect to the Series C-2 Preferred Stock will convert into shares of Common Stock at the then current fair market value. The Series C-2 Convertible Preferred Stock has no expiration date.
- The Series C-1 Convertible Preferred Stock is convertible into Common Stock on a 1-for-1.75 basis into the number of shares of Common Stock as shown in column 3 at any time at the holder's election, and automatically upon (i) the closing of the Issuer's firm commitment underwritten initial public offering in the event it results in net proceeds of at least \$100,000,000 and (ii) upon the election of the holders of a majority of the then outstanding shares of such series. Upon conversion, all dividends that have accrued with respect to the Series C-1 Preferred Stock will convert into shares of Common Stock at the then current fair market value. The Series C-1 Convertible Preferred Stock has no expiration date.
- The Series C Convertible Preferred Stock is convertible into Common Stock on a 1-for-1.75 basis into the number of shares of Common Stock as shown in column 3 at any time at the holder's election, and automatically upon (i) the closing of the Issuer's firm commitment underwritten initial public offering in the event it results in net proceeds of at least \$100,000,000 and (ii) upon the election of the holders of a majority of the then outstanding shares of such series. Upon conversion, all dividends that have accrued with respect to the Series C Preferred Stock will convert into shares of Common Stock at the then current fair market value. The Series C Convertible Preferred Stock has no expiration date.
- The Series B-1 Convertible Preferred Stock is convertible into Common Stock on a 1-for-1.75 basis into the number of shares of Common Stock as shown in column 3 at any time at the holder's election, and automatically upon (i) the closing of the Issuer's firm commitment underwritten initial public offering in the event it results in net proceeds of at least \$100,000,000 and (ii) upon the election of the holders of a majority of the then outstanding shares of such series. Upon conversion, all dividends that have accrued with respect to the Series B-1 Preferred Stock will convert into shares of Common Stock at the then current fair market value. The Series B-1 Convertible Preferred Stock has no expiration date.
- The Series B Convertible Preferred Stock is convertible into Common Stock on a 1-for-1.75 basis into the number of shares of Common Stock as shown in column 3 at any time at the holder's election, and automatically upon (i) the closing of the Issuer's firm commitment underwritten initial public offering in the event it results in net proceeds of at least \$100,000,000 and (ii) upon the election of the holders of a majority of the then outstanding shares of such series. Upon conversion, all dividends that have accrued with respect to the Series B Preferred Stock will convert into shares of Common Stock at the then current fair market value. The Series B Convertible Preferred Stock has no expiration date.
- These options are immediately exercisable.
- Randal J. Kirk controls each of New River Management V, LP ("NRM V"), NRM VI Holdings I, LLC ("NRM VI Holdings"), R.J. Kirk Declaration of Trust ("R.J. DOT"), JPK 2008 LLC ("JPK 2008"), JPK 2009 LLC ("JPK 2009"), JPK 2012 LLC ("JPK 2012"), MGK 2008 LLC ("MGK 2008"), MGK 2009 LLC ("MGK 2009"), MGK 2011 LLC ("MGK 2011"), ZSK 2008 LLC ("ZSK 2008"), ZSK 2009 LLC ("ZSK 2009"), the Kellie L. Banks (2009) Long Term Trust ("Kellie L. Banks LTT"), ADC 2010 LLC ("ADC 2010"), New River Management IV, LP ("NRM IV"), NewVa Capital Partners, LP ("NewVa") and Third Security Staff 2001 LLC ("Staff 2001"). Shares held by these entities may be deemed to be indirectly beneficially owned (as defined under Rule 13d-3 promulgated under the Securities Exchange Act of 1934, as amended) by Mr. Kirk. Mr. Kirk disclaims beneficial ownership of such shares, except to the extent of any pecuniary interest therein.

Remarks:

/s/ Randal J. Kirk

08/07/2013

** Signature of Reporting Person

Date

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

* If the form is filed by more than one reporting person, see Instruction 5 (b)(v).

** Intentional misstatements or omissions of facts constitute Federal Criminal Violations See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

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