

**STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP**

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

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

OMB APPROVAL	
OMB Number:	3235-0287
Estimated average burden hours per response:	0.5

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. Issuer Name and Ticker or Trading Symbol <u>INTREXON CORP [ XON ]</u>	5. 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) <input type="checkbox"/> Other (specify below)  <u>Chief Executive Officer</u>
	3. Date of Earliest Transaction (Month/Day/Year) <u>05/09/2014</u>	
	4. 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  <input type="checkbox"/> Form filed by More than One Reporting Person

**Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned**

1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)		4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5)			5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price			
Common Stock	05/09/2014		P		15,088	A	\$13.42	779,294	I	by MGK 2009 <sup>(1)</sup>
Common Stock	05/12/2014		P		18,066	A	\$15.89	797,360	I	by MGK 2009 <sup>(1)</sup>
Common Stock	05/13/2014		P		32,019	A	\$15.63	829,379	I	by MGK 2009 <sup>(1)</sup>
Common Stock								243,001	I	by NRM VII Holdings <sup>(1)</sup>
Common Stock								4,711,852	I	by R.J. Kirk DOT <sup>(1)</sup>
Common Stock								699,586	I	by JPK 2009 <sup>(1)</sup>
Common Stock								73,668	I	by ZSK 2009 <sup>(1)</sup>
Common Stock								101,482	I	by JPK 2008 <sup>(1)</sup>
Common Stock								102,437	I	MGK 2008 <sup>(1)</sup>
Common Stock								76,611	I	ZSK 2008 <sup>(1)</sup>
Common Stock								940,426	I	MGK 2011 <sup>(1)</sup>
Common Stock								818,461	I	by JPK 2012 <sup>(1)</sup>
Common Stock								131,081	I	by Kellie L. Banks LTT <sup>(1)</sup>
Common Stock								179,199	I	by ADC 2010 <sup>(1)</sup>
Common Stock								5,746,167	I	by Kapital Joe <sup>(1)</sup>
Common Stock								5,428,401	I	by Mascara Kaboom <sup>(1)</sup>
Common Stock								178,724	I	by Staff 2001 <sup>(2)</sup>

**Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned**

1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)		4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5)			5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price			
Common Stock								1,356,648	I	by Senior Staff 2008 <sup>(2)</sup>
Common Stock								1,356,648	I	Staff 2010 <sup>(2)</sup>
Common Stock								678,323	I	by Incentive 2010 <sup>(2)</sup>
Common Stock								1,196,077	I	by NRM IV <sup>(2)</sup>
Common Stock								22,636,052	I	by NRM V <sup>(2)</sup>
Common Stock								13,340,645	I	by NRM VI Holdings <sup>(2)</sup>
Common Stock								1,679,578	I	by NewVa <sup>(2)</sup>
Common Stock								127,634	I	by Alana Czypinski <sup>(2)</sup>

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

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)		5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)		6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4)	8. Price of Derivative Security (Instr. 5)	9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
				Code	V	(A)	(D)	Date Exercisable	Expiration Date					

**Explanation of Responses:**

1. Randal J. Kirk controls each of MGK 2009, LLC ("MGK 2009"), New River Management VII Holdings I, LLC ("NRM VII Holdings"), R.J. Kirk Declaration of Trust ("R.J. DOT"), JPK 2009, LLC ("JPK 2009"), ZSK 2009, LLC ("ZSK 2009"), JPK 2008, LLC ("JPK 2008"), MGK 2008, LLC ("MGK 2008"), ZSK 2008, LLC ("ZSK 2008"), MGK 2011, LLC ("MGK 2011"), JPK 2012, LLC ("JPK 2012"), Kellie L. Banks (2009) Long Term Trust ("Kellie L. Banks LTT"), ADC 2010, LLC ("ADC 2010"), Kapital Joe, LLC ("Kapital Joe") and Mascara Kaboom, LLC ("Mascara Kaboom"). Shares held by these entities may be deemed to be 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.

2. Randal J. Kirk controls each of Third Security Staff 2001 LLC ("Staff 2001"), Third Security Senior Staff 2008 LLC ("Senior Staff 2008"), Third Security Staff 2010 LLC ("Staff 2010"), Third Security Incentive 2010 LLC ("Incentive 2010"), New River Management IV, LP ("NRM IV"), New River Management V, LP ("NRM V"), NRM VI Holdings I, LLC ("NRM VI Holdings") and NewVa Capital Partners, LP ("NewVa"). Shares held by these entities may be deemed to be 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

05/13/2014

\*\* 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 4 (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.

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB Number.