

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>08/17/2016</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	08/17/2016		X		8,871	A	\$2.65	5,256,447	I	by R.J. Kirk DOT ⁽²⁾⁽¹⁾
Common Stock	08/17/2016		X		2,957	A	\$3.18	5,259,404	I	by R.J. Kirk DOT ⁽²⁾⁽¹⁾
Common Stock								246,434	I	by Third Security ⁽²⁾
Common Stock								311,287	I	by Staff 2001 ⁽²⁾
Common Stock								1,403	I	by Lotus ⁽²⁾
Common Stock								139,052	I	by JPK 2008 ⁽²⁾
Common Stock								140,007	I	by MGK 2008 ⁽²⁾
Common Stock								114,181	I	by ZSK 2008 ⁽²⁾
Common Stock								720,562	I	by JPK 2009 ⁽²⁾
Common Stock								850,355	I	by MGK 2009 ⁽²⁾
Common Stock								75,684	I	by ZSK 2009 ⁽²⁾
Common Stock								843,044	I	by JPK 2012 ⁽²⁾
Common Stock								135,033	I	by Kellie L. Banks LTT ⁽²⁾
Common Stock								118,266	I	by Senior Staff 2006 ⁽²⁾
Common Stock								59,133	I	by Staff 2006 ⁽²⁾
Common Stock								19,711	I	by Incentive 2006 ⁽²⁾

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								6,649,997	I	by Kapital Joe ⁽³⁾
Common Stock								5,483,957	I	by Mascara Kaboom ⁽³⁾
Common Stock								58,800	I	by Sr. Staff ⁽³⁾
Common Stock								179,199	I	by ADC 2010 ⁽³⁾
Common Stock								940,426	I	by MGK 2011 ⁽³⁾
Common Stock								1,356,648	I	by Senior Staff 2008 ⁽³⁾
Common Stock								1,356,648	I	by Staff 2010 ⁽³⁾
Common Stock								678,323	I	by Incentive 2010 ⁽³⁾
Common Stock								22,636,052	I	by NRM V ⁽³⁾
Common Stock								13,340,645	I	by NRM VI Holdings ⁽³⁾
Common Stock								243,001	I	by NRM VII Holdings ⁽³⁾

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	Title	Amount or Number of Shares				
Option to Purchase Common Stock	\$2.65	08/17/2016		X		8,871		(4)	02/20/2018	Common Stock	8,871	\$0	0	I	R.J. Kirk DOT ⁽²⁾⁽¹⁾
Option to Purchase Common Stock	\$3.18	08/17/2016		X		2,957		(4)	02/20/2019	Common Stock	2,957	\$0	0	I	R.J. Kirk DOT ⁽²⁾⁽¹⁾

Explanation of Responses:

- Mr. Kirk has designated the R.J. Kirk Declaration of Trust ("R.J. Kirk DOT") to receive these shares.
- Randal J. Kirk controls each of Third Security, LLC ("Third Security"), R.J. Kirk DOT, Third Security Staff 2001 LLC ("Staff 2001"), Lotus Capital (2000) Company Inc. ("Lotus"), JPK 2008, LLC ("JPK 2008"), MGK 2008, LLC ("MGK 2008"), ZSK 2008, LLC ("ZSK 2008"), JPK 2009, LLC ("JPK 2009"), MGK 2009, LLC ("MGK 2009"), ZSK 2009, LLC ("ZSK 2009"), JPK 2012, LLC ("JPK 2012"), Kellie L. Banks (2009) Long Term Trust ("Kellie L. Banks LTT"), Third Security Senior Staff 2006 LLC ("Senior Staff 2006"), Third Security Staff 2006 LLC ("Staff 2006") and Third Security Incentive 2006 LLC ("Incentive 2006"). 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.
- Randal J. Kirk controls each of Kapital Joe, LLC ("Kapital Joe"), Mascara Kaboom, LLC ("Mascara Kaboom"), Third Security Senior Staff LLC ("Sr. Staff"), ADC 2010, LLC ("ADC 2010"), MGK 2011, LLC ("MGK 2011"), 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 V, LP ("NRM V"), NRM VI Holdings I, LLC ("NRM VI Holdings") and NRM VII Holdings I, LLC ("NRM VII Holdings"). 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.
- These options were granted to Mr. Kirk pursuant to his service on the Board of Directors of the issuer and were exercisable immediately upon the date of grant.

/s/ Randal J. Kirk

08/18/2016

** 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.

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