

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	
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1. Name and Address of Reporting Person * PUMA MARY G (Last) (First) (Middle) C/O AXCELIS TECHNOLOGIES, INC. 108 CHERRY HILL DRIVE (Street) BEVERLY MA 01915 (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol AXCELIS TECHNOLOGIES INC [ACLS]	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) <input checked="" type="checkbox"/> Director 10% Owner <input checked="" type="checkbox"/> Officer (give title below) Other (specify below) President and CEO
	3. Date of Earliest Transaction (Month/Day/Year) 05/09/2017	
4. If Amendment, Date of Original Filed (Month/Day/Year)		

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	05/09/2017		M		46,598	A	\$2.8	240,684 ⁽¹⁾	D	
Common Stock	05/09/2017		S		46,598	D	\$21.09 ⁽²⁾	194,086 ⁽¹⁾	D	
Common Stock	05/10/2017		M		15,902	A	\$2.8	209,988	D	
Common Stock	05/10/2017		M		62,500	A	\$3.72	272,488	D	
Common Stock	05/10/2017		S		78,402	D	\$21.05 ⁽³⁾	194,086 ⁽¹⁾	D	
Common Stock	05/11/2017		M		62,500	A	\$4.64	256,686	D	
Common Stock	05/11/2017		S		62,500	D	\$21.01 ⁽⁴⁾	194,086 ⁽¹⁾	D	
Common Stock								5,000	I	Held by Spouse

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
Stock Option (right to buy)	\$2.8	05/09/2017		M		46,598		11/17/2012	11/17/2018	Common Stock	46,598	\$0.00	15,902	D	
Stock option (right to buy)	\$2.8	05/10/2017		M		15,902		11/17/2012	11/17/2018	Common Stock	15,902	\$0.00	0	D	
Stock option (right to buy)	\$3.72	05/10/2017		M		62,500		07/16/2016	07/16/2019	Common Stock	62,500	\$0.00	0	D	
Stock option (right to buy)	\$4.64	05/11/2017		M		62,500		11/16/2013	11/16/2019	Common Stock	62,500	\$0.00	0	D	

Explanation of Responses:

- Of the shares held as of May 9, 10 and 11, 2017, 75,000 were issuable on vesting of restricted stock units granted under the 2012 Equity Incentive Plan and are subject to forfeiture.
- The price reported in Column 4 is a weighted-average price. These shares were sold in multiple transactions at prices ranging from \$21.00 to \$21.45, inclusive. The reporting person undertakes to provide to Axcelis Technologies, Inc., any security holder of Axcelis Technologies, Inc., or the staff of the Securities and Exchange Commission, upon request, full information regarding the number of shares purchased at each separate price.
- The price reported in Column 4 is a weighted-average price. These shares were sold in multiple transactions at prices ranging from \$21.00 to \$21.40, inclusive. The reporting person undertakes to provide to Axcelis Technologies, Inc., any security holder of Axcelis Technologies, Inc., or the staff of the Securities and Exchange Commission, upon request, full information regarding the number of shares purchased at each separate price.
- The price reported in Column 4 is a weighted-average price. These shares were sold in multiple transactions at prices ranging from \$21.00 to \$21.10, inclusive. The reporting person undertakes to provide to Axcelis Technologies, Inc., any security holder of Axcelis Technologies, Inc., or the staff of the Securities and Exchange Commission, upon request, full information regarding the number of shares purchased at each separate price.

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Remarks:

Lynette C. Fallon, as attorney. 05/11/2017
in fact for Mary G. Puma

** 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.