

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

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

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>PUMA MARY G</u>  (Last) (First) (Middle) <u>C/O AXCELIS TECHNOLOGIES, INC.</u> <u>108 CHERRY HILL DRIVE</u>  (Street) <u>BEVERLY MA 01915</u>  (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <u>AXCELIS TECHNOLOGIES INC [ ACLS ]</u>	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) <u>Executive Chairperson</u>
	3. Date of Earliest Transaction (Month/Day/Year) <u>05/16/2023</u>	
	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	05/16/2023		F		2,330	D <sup>(1)</sup>	\$129.92 <sup>(2)</sup>	332,218 <sup>(3)</sup>	D	
Common Stock	05/17/2023		F		2,332	D <sup>(1)</sup>	\$137.69 <sup>(2)</sup>	328,986 <sup>(4)</sup>	D	
Common Stock	05/18/2023		S		8,578	D	\$141.52 <sup>(5)</sup>	320,408 <sup>(6)</sup>	D	
Common Stock	05/18/2023		G/K		4,778	D	\$0.00 <sup>(7)</sup>	315,630 <sup>(8)</sup>	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)					

Explanation of Responses:

- These shares were withheld by the Company to cover the tax withholding obligations of the executive on the vesting of restricted stock units.
- Represents the closing price of the common stock on the date of the tax withholding.
- Of the shares held after this tax withholding forfeiture (and related vesting) on May 16, 2023, 74,706 shares were issuable on vesting of restricted stock units granted to the executive under the 2012 Equity Incentive Plan and are subject to forfeiture.
- Of the shares held after this tax withholding forfeiture (and related vesting) on May 17, 2023, 67,420 shares were issuable on vesting of restricted stock units granted to the executive 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 \$141.45 to \$141.60, 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 sold at each separate price.
- Of the shares held after this sale on May 18, 2023, 67,420 shares were issuable on vesting of restricted stock units granted to the executive under the 2012 Equity Incentive Plan and are subject to forfeiture.
- These shares of Common Stock were donated by the reporting person as a gift to a Morgan Stanley Charitable Account, a donor advised fund, entitled MS GIFT EIVIND LANGE MARY PUMA DAF.
- Of the shares held after this gift on May 18, 2023, 67,420 were issuable on vesting of restricted stock units granted to the reporting person under the 2012 Equity Incentive Plan and are subject to forfeiture.

Remarks:

Lynnette C. Fallon, as  
attorney in fact for Mary G. Puma      05/18/2023

\*\* 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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