FORM 4

Section 16. Form 4 or Form 5 obligations may continue. See

Instruction 1(b)

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Machinaton	$D \subset$	20E 40	
Washington,	D.C.	20549	

Check this box if no longer subject to

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

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

	nd Address of I JOSEPH	f Reporting Person							IACEU		CALS	INC [ON	S (Cr	reck all appl		ig Persor	11(S) 10 1S:	suer	
TELLIIV		_]								X Direct		10% Ov								
(Last) 2855 GA	(F AZELLE CO	,	(Middle)		3. Da			iest Traı	nsaction (I	Montl	h/Day/Yea		below)	r (give title)	e Other (s below)		респу			
						\mei	ndme	nt, Date	of Origina	al File	ed (Month		6. Individual or Joint/Group Filing (Check Applicable Line)							
(Street)	(Street) CARLSBAD CA 92010				_							- 1	X Form filed by One Reporting Person Form filed by More than One Reporting Person							
(City)	(S	tate)	(Zip)		Rul	Rule 10b5-1(c) Transaction Indication														
						Check this box to indicate that a transaction was made pursuant to a contract, instruction or written plan that is intended to satisfy the affirmative defense conditions of Rule 10b5-1(c). See Instruction 10.														
		Tabl	e I - No	n-Deriv	ative	Sec	uriti	ies Ac	quired	, Di	sposed	of, or l	3en	eficia	lly Owne	d				
1. Title of Security (Instr. 3)		2. Transaction Date (Month/Day/Year)		2A. Deemed Execution Date, if any (Month/Day/Year)			Code	Transaction Code (Instr.		4. Securities Acquired (A Disposed Of (D) (Instr. 3, 5)			Benefic Owned	ies ially Following	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)		7. Nature of Indirect Beneficial Ownership			
					Code	v	Amoui	nt (A) or)	Price	Transac	Reported Transaction(s) (Instr. 3 and 4)			(Instr. 4)					
Common	Stock				07/17/2023				M ⁽¹⁾	1)	1,77	7(1)	A	\$0.0	0 18	3,568	D			
Common	ommon Stock			07/17/2023					M ⁽¹⁾		5,33	3(1)	3 ⁽¹⁾ A		0 23	23,901				
Common	Stock				07/18/2023				S		3,55	5 ⁽²⁾	D	\$42	2 20	,346	D			
Common	Stock														1	100	I		by Son ⁽³⁾	
Common	Stock														6,000 I				by Trust	
		Ta								-		-			y Owned					
1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deen Executio if any	ution Date, Code (Instr. Sec th/Day/Year) 8) Sec Act (A) Dis		lumber ivative curities quired or posed D)	6. Date E	Date Excisable and Expiration Date Month/Day/Year)			and t of es ring	ecurity	8. Price of Derivative Security (Instr. 5)	9. Number derivative Securities Beneficiall Owned Following Reported Transactio (Instr. 4)	Own For Director I (I) (I	o. wnership orm: irect (D) Indirect (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)			
					Code	v	(A)	(D)	Date Exercisa	ble	Expiration Date	Title	0 N 0	mount r lumber f shares						
Restricted Stock Unit	\$0.0 ⁽⁴⁾	07/17/2023			M			1,777	(5)		(5)	Commo Stock	n 1	1,777	\$0.0	10,010		D		
Restricted Stock Unit	\$0.0 ⁽⁴⁾	07/17/2023			M			5,333	(6)		(6)	Commo		5,333	\$0.0	4,677		D		

Explanation of Responses:

- 1. Acquired pursuant to vesting and release of shares in accordance with a Restricted Stock Unit award.
- $2.\ Shares\ sold\ pursuant\ to\ a\ Rule\ 10b5-1\ Trading\ Plan\ adopted\ by\ the\ reporting\ person\ on\ November\ 17,2022$
- 3. The reporting person disclaims beneficial ownership of all securities held by his son, and this report should not be deemed an admission that the reporting person is the beneficial owner of such securities for purposes of Section 16 or for any other purpose.
- 4. Each Restricted Stock Unit represents a contingent right to receive one share of Ionis common stock, or its equivalent cash value.
- 5. Restricted Stock Units vest in four equal annual installments. Upon vesting, the restricted stock units will be paid out in whole shares of Ionis common stock or cash as may be determined by the Company.
- 6. Restricted Stock Units vest 100% on either the first anniversary of the date of grant or the next regularly scheduled annual meeting of stockholders of the Company, whichever occurs earlier, and are delivered to the reporting person on the July 15th following the vesting date. Upon vesting, the Restricted Stock Units will be paid in whole shares of Ionis common stock or cash as may be determined by the Company.

By: Patrick R. O'Neil, attorney-in-fact For: Joseph 07/19/2023 Klein III

** 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.