ARCA biopharma, Inc.
Form 424B4
November 13, 2013
Prospects Supplement No. 10 **Filed pursuant to Rule 424(b)(4)**

(to Prospectus dated May 30, 2013) **Registration No. 333-187508**

125,000 Shares of Series A Convertible Preferred Stock

12,500,000 Shares of Common Stock Underlying the Preferred Stock

Warrants to Purchase up to 6,250,000 Shares of Common Stock and

6,250,000 Shares of Common Stock Underlying the Warrants

ARCA biopharma, Inc.

This prospectus supplement supplements the prospectus dated May 30, 2013 (the Prospectus), as supplemented by that certain Prospectus Supplement No. 1 dated July 17, 2013 (Supplement No. 1), by that certain Prospectus Supplement No. 2 dated July 19, 2013 (Supplement No. 2), by that certain Prospectus Supplement No. 3 dated July 24, 2013 (Supplement No. 3), by that certain Prospectus Supplement No. 4 dated July 30, 2013 (Supplement No. 4), by that certain Prospectus Supplement No. 5 dated August 6, 2013 (Supplement No. 5), by that certain Prospectus Supplement No. 6 dated September 4, 2013 (Supplement No. 6), by that certain Prospectus Supplement No. 7 dated September 23, 2013 (Supplement No. 7), by that certain Prospectus Supplement No. 8 dated October 29, 2013 (Supplement No. 8), and by that certain Prospectus Supplement No. 9 dated November 6, 2013 (Supplement No. 9 , and together with Supplement No. 1, Supplement No. 2, Supplement No. 3, Supplement No. 4, Supplement No. 5, Supplement No. 6, Supplement No. 7, and Supplement No. 8, the Supplements), which form a part of our Registration Statement on Form S-1 (Registration No. 333-187508). This prospectus supplement is being filed to update and supplement the information in the Prospectus and the Supplements with the information contained in our quarterly report on Form 10-Q, filed with the Securities and Exchange Commission (the Commission) on November 13, 2013 (the Quarterly Report). Accordingly, we have attached the Quarterly Report to this prospectus supplement.

The Prospectus, the Supplements and this prospectus supplement relate to the offer and sale of up to 125,000 shares of Series A Convertible Preferred Stock (Preferred Stock) which are convertible into 12,500,000 shares of Common Stock, warrants to purchase up to 6,250,000 shares of our Common Stock and 6,250,000 shares of Common Stock underlying the warrants.

This prospectus supplement should be read in conjunction with the Prospectus and the Supplements. This prospectus supplement updates and supplements the information in the Prospectus and the Supplements. If there is any inconsistency between the information in the Prospectus, the Supplements and this prospectus supplement, you should rely on the information in this prospectus supplement.

Our common stock is traded on the Nasdaq Global Market under the trading symbol ABIO. On November 13, 2013, the last reported sale price of our common stock was $1.47 per share.

Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading Risk Factors beginning on page 5 of the Prospectus and beginning on page 23 of our quarterly report on Form 10-Q for the quarterly period ended September 30, 2013 before you decide whether to invest in shares of our common stock.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if the Prospectus or this prospectus supplement is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus supplement is November 13, 2013

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 10-Q

(Mark One)

x QUARTERLY REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
FOR THE QUARTERLY PERIOD ENDED SEPTEMBER 30, 2013

OR

¨ TRANSITION REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
FOR THE TRANSITION PERIOD FROM TO

Commission File Number 000-22873

ARCA BIOPHARMA, INC.

(Exact Name of Registrant as Specified in Its Charter)

Delaware	36-3855489
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification Number)
11080 CirclePoint Road, Suite 140, Westminster, CO	80020

(Address of Principal Executive Offices) (Zip Code)
(720) 940-2200

(Registrant s Telephone Number, including Area Code)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Sections 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes x No ¨

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes x No ¨

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of large accelerated filer, accelerated filer and smaller reporting company in Rule 12b-2 of the Exchange Act.

Large accelerated filer ¨ Accelerated filer ¨
Non-accelerated filer ¨ (Do not check if smaller reporting company) Smaller reporting company x

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ¨ No x

Indicate the number of shares outstanding of each of the issuer s classes of common stock, as of the latest practicable date.

Class	Number of Shares Outstanding
Common Stock $0.001 par value	On November 8, 2013: 15,675,562

ARCA BIOPHARMA, INC.

FORM 10-Q

FOR THE QUARTER ENDED SEPTEMBER 30, 2013

PART I. FINANCIAL INFORMATION

ITEM 1. CONSOLIDATED FINANCIAL STATEMENTS

ARCA BIOPHARMA, INC.

(a development stage enterprise)

CONSOLIDATED BALANCE SHEETS

(Unaudited)

	September 30, 2013	December 31, 2012
	(in thousands, except share and per share amounts)	
ASSETS		
Current assets:		
Cash and cash equivalents	$ 18,632	$ 2,920
Other current assets	379	125
Total current assets	19,011	3,045
Property and equipment, net	27	23
Other assets	100	144
Total assets	$ 19,138	$ 3,212
LIABILITIES AND STOCKHOLDERS EQUITY		
Current liabilities:		
Accounts payable	$ 447	$ 65
Accrued compensation and employee benefits	75	103
Accrued expenses and other liabilities	247	121
Deferred rent, current portion		16
Total current liabilities	769	305
Total liabilities	769	305
Commitments and contingencies		
Stockholders equity:		
Series A convertible preferred stock, $0.001 par value; 135,000 shares authorized; 24,902 shares issued and outstanding at September 30, 2013; no shares authorized, issued and outstanding at December 31, 2012		
Common stock, $0.001 par value; 100 million shares authorized; 13,195,362 shares issued and outstanding at September 30, 2013; 2,660,315 shares issued and outstanding at December 31, 2012.	13	3
Additional paid-in capital	90,343	70,898

Deficit accumulated during the development stage	(71,987)	(67,994)
Total stockholders equity	18,369	2,907
Total liabilities and stockholders equity	$ 19,138	$ 3,212

See accompanying notes to consolidated financial statements

ARCA BIOPHARMA, INC.

(a development stage enterprise)

CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS

(unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,		Period from December 17, 2001 (date of inception) to September 30,
	2013	2012	2013	2012	2013
	(in thousands, except share and per share amounts)				
Costs and expenses:					
Research and development	$ 714	$ 156	$ 1,141	$ 901	$ 43,818
Selling, general and administrative	1,011	772	2,852	2,579	45,435
Merger transaction costs					5,470
Restructuring expense, net					2,413
Loss on impairment of in-process research and development					6,000
Total costs and expenses	1,725	928	3,993	3,480	103,136
Loss from operations	(1,725)	(928)	(3,993)	(3,480)	(103,136)
Gain on assignment of patent rights					2,000
Gain on bargain purchase					25,282
Interest and other income	2	2	3	3	2,031
Interest and other expense		(1)	(3)	(3)	(445)
Loss before income taxes	(1,723)	(927)	(3,993)	(3,480)	(74,268)
Benefit from income taxes					2,281
Net loss and comprehensive loss	$ (1,723)	$ (927)	$ (3,993)	$ (3,480)	$ (71,987)
Less: Accretion of redeemable convertible preferred stock					(245)
Less: Deemed preferred stock dividend			(2,026)		(2,807)
Net loss attributable to common stockholders	$ (1,723)	$ (927)	$ (6,019)	$ (3,480)	$ (75,039)

Net loss attributable to common stockholders per share:				
Basic and diluted	$ (0.16)	$ (0.41)	$ (0.96)	$ (1.65)
Weighted average shares outstanding:				
Basic and diluted	10,832,516	2,283,736	6,299,828	2,113,679

See accompanying notes to consolidated financial statements

ARCA BIOPHARMA, INC.

(a development stage enterprise)

CONSOLIDATED STATEMENTS OF PREFERRED STOCK AND STOCKHOLDERS EQUITY (DEFICIT)

(unaudited)

	Series A Redeemable Convertible Preferred Stock		Series B Redeemable Convertible Preferred Stock		Series A Convertible Preferred Stock		Stockholders Equity (Deficit)				
	Shares	Amount	Shares	Amount	Shares	Amount	Common Stock Shares	Common Stock Amount	Additional Paid In Capital	Deficit Accumulated During the Development Stage	To
	(in thousands, except share and per share amounts)										
e, ber 17, date of on)	$		$		$			$	$	$	$
ce of on stock ders on ber 31, or cash, 6 per											
s							2,588		1	(116)	
e, ber 31,							2,588		1	(116)	
ce of on stock											
ber 30, or cash, 6 per											
s							19,720		7	(511)	
e, ber 31,							22,308		8	(627)	
ce of on stock uary 3,							2,922		1		

or cash, 6 per							
ce of on stock uary 3, upon sion of ayable ated d t at per							
				2,978	1		
ce of on stock ober 14, or tual ty rights, 84 per							
				903	44		
ce of on stock ober 14, upon sion of ayable ated d t s e, ber 31,				31,095	1,354	(1,459)	(1
				60,206	1,408	(2,086)	
ce of on stock ry 21, or tual ty rights, 2 per							
				17,372	75		
ce of A on ry 22, or cash, 265 per	5,727,354	9,316					

ce of A on ry 22, pon sion of ayable ated d , at 5 per					
	420,817	684			
ce of on stock xercise k s, for					
				8,019	3

See accompanying notes to consolidated financial statements

	Series A Redeemable Convertible Preferred Stock		Series B Redeemable Convertible Preferred Stock		Series A Convertible Preferred Stock		Stockholders Equity (Deficit)				
	Shares	Amount	Shares	Amount	Shares	Amount	Common stock Shares	Amount	Additional Paid In Capital	Deficit Accumulated During the Development Stage	To
	(in thousands, except share and per share amounts)										
ce of on stock											
ry 22, for ctual ty and t rights, 2 per							13,907		60		
ce of on stock e 23, for ctual ty rights, 0 per							2,505		15		
ce of on stock											
nber 7, for ctual ty rights, 0 per							38				
ce of A on nber 8, for cash, 265 per	3,074,086	5,000									
A g costs		(98)							39		

based nsation ion of g costs eemable tible ed							
	17				(17)		
ss						(5,241)	(5
e, ber 31,							
	9,222,257	14,919		102,047	1,583	(7,327)	(5
ce of B tible nable ed on 1, 2007 439 per							
		3,688,902	9,000				
ce of B tible nable ed on ber 28, or per							
		2,766,677	9,000				
B g Costs			(147)				
ion of A g costs	19				(19)		
ion of B g costs			18		(18)		
ce of on stock ellectual ty e rights, uary 18, t per							
				1,303	13		
ce of on stock ellectual				642	7		

ty e rights, e 30, t per		
ce of on stock		
ercial e rights, y 19, vests		
ement cified a	2,783	
based nsation		50
ce of to ive on ry 19, vesting		
ement cified a, t to hase	13,915	

See accompanying notes to consolidated financial statements

	Series A Redeemable Convertible Preferred Stock		Series B Redeemable Convertible Preferred Stock		Series A Convertible Preferred Stock		Stockholders Equity (Deficit)				
	Shares	Amount	Shares	Amount	Shares	Amount	Common stock Shares	Amount	Additional Paid In Capital	Deficit Accumulated During the Development Stage	Total
	(in thousands, except share and per share amounts)										
uance of mmon stock on exercise stock ions for h							2,227		16		1
loss										(13,994)	(13,99
ance, cember 31, 07	9,222,257	16,938	4,958,579	17,871			122,917		1,632	(21,321)	(19,68
cretion of ies A ering costs			20						(20)		(2
cretion of ies B ering costs					36				(36)		(3
are-based mpensation imated fair ue of rrants ued in nection h vertible es payable									545		54
									399		39
uance of mmon stock on exercise stock ions, for h							36,154		54		5
loss										(19,431)	(19,43
ance, cember 31, 08	9,222,257	16,958	4,958,579	17,907			159,071		2,574	(40,752)	(38,17
justment fractional res on							(7)				

mmon nversion emed ferred ck dividend additional mmon res uable under i-dilution vision			781			(781)	(78
cretion of ies A ering costs		42				(42)	(4
cretion of ies B ering costs			93			(93)	(9
nversion of ferred ck	(9,222,257)	(16,455,579)	(18,781)	507,123	1	33,780	33,78
stricted ck release m riction						75	7
nversion of vertible es and ated rued erest				145,465		8,501	8,50
nversion of rrants for ferred ck						36	3
rger with velo, Inc.				447,826		11,913	11,91
justment fractional res				(102)			
are-based mpensation						845	84
uance of mmon stock n exercise stock ions for h				10,521		114	11
uance of mmon stock ler ployee				177		2	

ck purchase n and upon ting of ricted ck units imated fair ue of rrants ued in nection h lease mination			377		37
loss				(9,138)	(9,13
ance, cember 31, 09	1,270,074	1	57,301	(49,890)	7,41

See accompanying notes to consolidated financial statements

	Series A Redeemable Convertible Preferred Stock		Series B Redeemable Convertible Preferred Stock		Stockholders Equity (Deficit)				
	Series A Convertible Preferred Stock				Common Stock		Additional Paid In Capital	Deficit Accumulated During the Development Stage	Total
	Shares	Amount	Shares	Amount	Shares	Amount			
	(in thousands, except share and per share amounts)								
Issuance of common stock for cash, net of offering costs					194,100		7,182		7,182
Issuance of common stock upon exercise of stock options for cash					8,248		139		139
Share-based compensation							458		458
Net loss								(8,420)	(8,420)
Balance, December 31, 2010					1,472,422	1	65,080	(58,310)	6,771
Issuance of common stock for cash, net of offering costs					557,890	1	4,016		4,017
Issuance of common stock upon exercise of stock options for cash					188				
Share-based compensation							308		308
Net loss								(5,364)	(5,364)
Balance, December 31, 2011					2,030,500	2	69,404	(63,674)	5,732
Issuance of common stock for cash, net of offering costs					629,815	1	1,188		1,189
Share-based compensation							306		306

Net loss					(4,320)	(4,320)
Balance, December 31, 2012		2,660,315	3	70,898	(67,994)	2,907
Issuance of common stock for cash, net of offering costs		521,066		1,421		1,421
Adjustment for fractional shares		(64)				
Issuance of common stock upon exercise of warrants for cash		4,245		12		12
Issuance of Series A convertible preferred stock, net of offering costs	125,000			17,917		17,917
Deemed preferred stock dividend for beneficial conversion feature				2,026		2,026
Impact of deemed preferred stock dividend for beneficial conversion feature on common stockholders				(2,026)		(2,026)
Conversion of preferred stock to common stock	(100,098)	10,009,800	10	(10)		
Costs of issuance of common stock and conversion of preferred stock to common stock				(20)		(20)
Share-based compensation				125		125
Net loss					(3,993)	(3,993)

Balance, September 30, 2013	$	$ 24,902	$ 13,195,362	$ 13	$ 90,343	$ (71,987)	$ 18,369

See accompanying notes to consolidated financial statements

ARCA BIOPHARMA, INC.

(a development stage enterprise)

CONSOLIDATED STATEMENTS OF CASH FLOWS

(unaudited)

	Nine Months Ended September 30,		Period from December 17, 2001 (date of inception) to September 30,
	2013	2012	2013
	(in thousands)		
Cash flows used in operating activities:			
Net loss	$ (3,993)	$ (3,480)	$ (71,987)
Adjustments to reconcile net loss to net cash used in operating activities:			
Gain on patent rights assignment			(2,000)
Gain on bargain purchase			(25,282)
Depreciation and amortization	24	34	1,804
Non-cash interest expense			211
Share-based compensation	125	243	2,713
Issuance of warrants for lease termination			377
Accretion of liabilities			152
Impairment of property and equipment			125
Impairment of in-process research and development			6,000
Write-off of deferred tax liability			(2,281)
Gain on marketable securities available for sale			(263)
(Gain) loss from disposal of property and equipment			83
Other, net			267
Change in operating assets and liabilities (net of amounts acquired):			
Other current assets	(80)	219	2,740
Other assets	44	60	7,370
Accounts payable	382	(141)	(1,743)
Accrued expenses and other liabilities	98	(318)	(19,123)
Deferred rent	(16)	(25)	
Net cash used in operating activities	(3,416)	(3,408)	(100,837)
Cash flows (used in) provided by investing activities:			
Cash received from Merger			30,392
Payment of deferred transaction costs			(1,186)
Purchase of property and equipment	(28)	(1)	(1,907)
Proceeds from sale of marketable securities			15,369
Proceeds from sale of property and equipment			358

Proceeds from patent rights assignment			2,000
Net cash (used in) provided by investing activities	(28)	(1)	45,026
Cash flows provided by (used in) financing activities:			
Proceeds from issuance of convertible notes payable and related warrants for common stock			10,841
Proceeds from issuance of bank note payable			4,000
Proceeds from stock subject to repurchase			38
Proceeds from the issuance of preferred stock	20,000		52,316
Payment of preferred stock offering costs	(2,083)		(2,329)
Proceeds from the issuance of common stock	1,741	953	15,850
Payment of common stock offering costs	(328)	(272)	(1,714)
Repayment of principal on bank note payable			(4,000)
Repayment of principal on convertible notes payables			(105)
Repayment of principal on vendor finance agreement	(174)	(134)	(454)
Net cash provided by (used in) financing activities	19,156	547	74,443
Net increase (decrease) in cash and cash equivalents	15,712	(2,862)	18,632
Cash and cash equivalents, beginning of period	2,920	5,943	
Cash and cash equivalents, end of period	$ 18,632	$ 3,081	$ 18,632
Supplemental cash flow information:			
Interest paid	$ 3	$ 3	$ 118
Supplemental disclosure of noncash investing and financing transactions:			
Accrued interest on notes payable converted to equity	$	$	$ 163
Warrant issued in connection with credit facility	$	$	$ 111
Accrued deferred transaction costs	$	$	$ 482
Vendor finance agreement	$	$	$

See accompanying notes to consolidated financial statements

ARCA BIOPHARMA, INC.

(a development stage enterprise)

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(unaudited)

(1) The Company and Summary of Significant Accounting Policies

Description of Business

ARCA biopharma, Inc., or the Company or ARCA, a Delaware corporation, is headquartered in Westminster, Colorado and is a biopharmaceutical company principally focused on developing genetically-targeted therapies for cardiovascular diseases. The Company s lead product candidate, Gencaro(bucindolol hydrochloride), a pharmacologically unique beta-blocker and mild vasodilator that ARCA plans to evaluate in a new clinical trial for the treatment of atrial fibrillation, or AF, in patients with heart failure and left ventricular dysfunction, or HFREF. The Company has identified common genetic variations in receptors in the cardiovascular system that it believes interact with Gencaro s pharmacology and may predict patient response to the drug.

The Company plans to test this hypothesis in a Phase 2B/3 clinical trial of Gencaro, known as GENETIC-AF. The AF indication for Gencaro was chosen based on prior clinical data from the previously conducted Phase 3 heart failure (HF) trial of Gencaro in 2,708 HF patients, or the BEST trial, suggest that Gencaro may be successful in reducing or preventing AF. GENETIC-AF is planned as a multi-center, randomized, double-blind clinical trial designed to compare the safety and efficacy of Gencaro to an active comparator in HFREF patients recently diagnosed with persistent AF and having beta-1 389 arginine homozygous genotype, the genotype the Company believes responds most favorably to Gencaro. The primary endpoint of GENETIC-AF is time to recurrent symptomatic AF or all-cause mortality.

ARCA has created an adaptive design for GENETIC-AF which it plans to initiate with a Phase 2B study in approximately 200 HFREF patients. The GENETIC-AF Data Safety Monitoring Board (DSMB) will analyze selected data from the Phase 2B portion of the trial and recommend whether the trial should proceed to Phase 3 and enroll an additional 420 patients. The DSMB will make their recommendation based on analysis of selected trial data after 200 patients have been enrolled and have completed 24 weeks of follow-up, the period for measuring the trial s primary end-point. The interim analysis will focus on available data regarding AF event rates, AF burden, and safety. Should the DSMB interim analysis conclude the data is consistent with the pre-trial statistical assumptions and that the data indicates potential for achieving statistical significance for the Phase 3 endpoint, then the DSMB may recommend the study proceed to Phase 3. The DSMB may also recommend changes to the study design before potentially proceeding to Phase 3, or it may recommend that the study not proceed to Phase 3. The Company, in consultation with the trial s clinical steering committee and the DSMB, will make the final determination on the trial s development steps. The Company believes the Phase 2B portion of the study would take approximately two and one-half years to complete from the time the first patient is enrolled until the planned DSMB interim analysis of data from the initial 200 patients.

The Company has been granted patents in the U.S., Europe, and other jurisdictions for methods of treating AF and HF patients with Gencaro based on genetic testing, which the Company believes may provide market exclusivity for these uses of Gencaro into at least 2026 in the U.S. and into 2025 in Europe. In addition, the Company believes that if Gencaro is approved, a Gencaro patent will be eligible for patent term extension based on our current clinical trial plans which, if granted, may provide market exclusivity for Gencaro into 2029 or 2030 in the U.S. and Europe.

To complete both phases of the GENETIC-AF clinical trial and submit for FDA approval, the Company will need to raise additional funding through public or private equity transactions or a strategic combination or partnership. If the Company is unable to obtain additional funding or is unable to complete a strategic transaction, it may have to discontinue development activities on Gencaro or discontinue its operations.

Development Stage Risks, Liquidity and Going Concern

The Company is in the development stage and devotes substantially all of its efforts towards obtaining regulatory approval for Gencaro and raising capital necessary to fund its operations. The Company has not generated revenue to date and is subject to a number of risks similar to those of other development stage companies, including dependence on key individuals, the development of and regulatory approval of commercially viable products, the need to raise adequate additional financing necessary to fund the development and commercialization of its products, and competition from larger companies. The Company has historically funded its operations through issuances of common and preferred stock, as well as through the business combination with Nuvelo, Inc, or Nuvelo.

Since ARCA was founded on December 17, 2001, or Inception, the Company has incurred substantial losses and negative cash flows from operations. Since Inception, the Company incurred a loss from operations of $103.1 million and had negative cash flows from operations of $100.8 million.

To support the continued development of Gencaro, the Company completed a public equity offering in June 2013 to initiate the Phase 2B/3 GENETIC-AF trial and fund ongoing operations. In light of the substantial additional time and costs associated with the development of Gencaro, the Company will need to raise a significant amount of capital on acceptable terms to finance the completion of GENETIC-AF and the Company s ongoing operations. The Company currently believes its cash and cash equivalents balance as of September 30, 2013 will be sufficient to fund its operations through at least 2014. However, changing circumstances may cause the Company to consume capital significantly faster or slower than is currently anticipated. These estimates are based upon assumptions that may prove to be wrong, and ARCA could exhaust its available financial resources sooner than currently projected.

The Company s liquidity, and its ability to raise additional capital or complete any strategic transaction, depends on a number of factors, including, but not limited to, the following:

·the costs and timing for the planned GENETIC-AF clinical trial ;

·the market price of the Company s stock and the availability and cost of additional equity or debt capital;

·the Company s ability to retain the listing of its common stock on the Nasdaq Capital Market;

·general economic and industry conditions affecting the availability and cost of capital;

·the Company s ability to control costs associated with its operations;

·the costs of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights; and

·the terms and conditions of the Company s existing collaborative and licensing agreements.

The sale of additional equity or convertible debt securities would likely result in additional dilution to the Company s existing stockholders. If the Company raises additional funds through the incurrence of indebtedness, the obligations related to such indebtedness would be senior to rights of holders of the Company s capital stock and could contain covenants that would restrict the Company s operations. The Company also cannot predict what consideration might be available, if any, to the Company or its stockholders, in connection with any strategic transaction. Should strategic alternatives or additional capital not be available to the Company, or not be available on acceptable terms, the Company may be unable to realize value from its assets and discharge its liabilities in the normal course of business which may, among other alternatives, cause the Company to further delay, substantially reduce or discontinue operational activities to conserve its cash resources.

Reverse Stock Split

On March 4, 2013, the Company completed a 1-for-6 reverse split of its common stock. All common shares and per common share amounts in the financial statements and footnotes have been adjusted retroactively to reflect the effects of this action.

Basis of Presentation

The accompanying unaudited consolidated financial statements of the Company were prepared in accordance with generally accepted accounting principles for interim financial information and instructions to Form 10-Q and Rule 10-01 of Regulation S-X. Accordingly, these financial statements do not include all of the information and footnotes required by accounting principles generally accepted in the United States of America for complete financial statements. In the opinion of management, these financial statements include all normal and recurring adjustments considered necessary for a fair presentation of these interim consolidated financial statements. The results of operations for the nine months ended September 30, 2013 are not necessarily indicative of results expected for the full year ending December 31, 2013. The Company has generated no revenue to date and its activities have consisted of seeking regulatory approval, research and development, exploring strategic alternatives for further developing and commercializing Gencaro, and raising capital. Accordingly, the Company continues to be considered in the development stage at September 30, 2013. These unaudited consolidated financial statements should be read in conjunction with the audited consolidated financial statements and footnotes thereto for the year ended December 31, 2012 included in the Company s Annual Report on Form 10-K filed with the Securities and Exchange Commission, as amended. Amounts presented are rounded to the nearest thousand, where indicated, except per share data and par values.

Concentrations of Credit Risk

Financial instruments that potentially subject the Company to significant concentrations of credit risk consist primarily of cash and cash equivalents. The Company has no off-balance-sheet concentrations of credit risk, such as foreign exchange contracts, option contracts, or foreign currency hedging arrangements. The Company maintains cash and cash equivalent balances in the form of bank demand deposits, money market fund accounts and debt securities with financial institutions that management believes are creditworthy. Such balances may at times exceed the insured amount.

Accrued Expenses

As part of the process of preparing its financial statements, the Company is required to estimate accrued expenses. This process involves identifying services that third parties have performed on the Company s behalf and estimating the level of service performed and the associated cost incurred for these services as of the balance sheet date. Examples of estimated accrued expenses include contract service fees, such as fees payable to contract manufacturers in connection with the production of materials related to the Company s drug product, and professional service fees, such as attorneys, consultants, and clinical research organizations. The Company develops estimates of liabilities using its judgment based upon the facts and circumstances known at the time.

(2) Loss Per Share

The Company calculates basic loss per share by dividing loss attributable to common stockholders by the weighted average common shares outstanding during the period, excluding common stock subject to vesting provisions. In the three and nine month periods ended September 30, 2013, the calculation of net loss attributable to common stockholders includes the effect of the deemed dividend to Series A Preferred Stock purchasers (see Note 7).

Diluted loss per share is computed by dividing loss attributable to common stockholders by the weighted average number of common shares outstanding during the period increased to include, if dilutive, the number of additional common shares that would have been outstanding if the potential common shares had been issued. The Company s potentially dilutive shares include Series A Convertible Preferred Stock, stock options and warrants for common stock.

A reconciliation of the numerator and denominator used in the calculation of basic and diluted loss per share follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
(In thousands, except shares and per share data)	2013	2012	2013	2012
Net loss	$ (1,723)	$ (927)	$ (3,993)	$ (3,480)
Less: Series A Preferred Stock deemed dividend			(2,026)	
Net loss available to common shareholders	$ (1,723)	$ (927)	$ (6,019)	$ (3,480)
Weighted average shares of common stock outstanding	10,835,299	2,286,519	6,302,611	2,116,462
Less: Weighted-average shares of unvested common stock	(2,783)	(2,783)	(2,783)	(2,783)
Total weighted-average shares used in computing net loss per share attributed to common stockholders	10,832,516	2,283,736	6,299,828	2,113,679
Basic and diluted loss per share	$ (0.16)	$ (.41)	$ (0.96)	$ (1.65)

Potentially dilutive securities representing 13.1 million and 0.8 million weighted average shares of common stock were excluded for the three months ended September 30, 2013 and 2012, respectively, and potentially dilutive securities representing 6.7 million and 0.7 million weighted average shares of common stock were excluded for the

nine months ended September 30, 2013 and 2012, respectively, because including them would have an anti-dilutive effect on net loss per share.

(3) Merger with Nuvelo, Inc. on January 27, 2009

On January 27, 2009, ARCA Colorado, Inc. (ARCA Colorado) completed the Merger with Nuvelo in accordance with the terms of the Merger Agreement, in which a wholly-owned subsidiary of Nuvelo merged with and into ARCA Colorado, with ARCA Colorado continuing after the Merger as the surviving corporation and a wholly-owned subsidiary of Nuvelo. Immediately following the Merger, the Company changed its name from Nuvelo, Inc. to ARCA biopharma, Inc., and its common stock began trading on the Nasdaq Global Market under the symbol ABIO on January 28, 2009. On March 7, 2011, the listing of the Company s common stock was transferred from the Nasdaq Global Market to the Nasdaq Capital Market.

The Merger was treated as a reverse merger and accounted for as a business combination using the acquisition method of accounting in accordance with ASC 805. For accounting purposes, ARCA Colorado was considered to have acquired Nuvelo in the Merger, as the stockholders of ARCA Colorado prior to the Merger had a controlling interest in the combined company and the Company s management is the former management of ARCA Colorado. The results of operations and cash flows include the activities of Nuvelo since the date of the Merger. Pursuant to the rules and regulations of the United States Securities and Exchange Commission, or the SEC, the historical financial statements of ARCA Colorado replaced the historical financial statements of Nuvelo, and the disclosures in this report relating to the pre-Merger business of the Company, unless noted as being the business of Nuvelo prior to the Merger, pertain to the business of ARCA Colorado prior to the Merger.

The estimated total acquisition consideration of $11.9 million to acquire Nuvelo was based on the market capitalization of Nuvelo as of January 27, 2009 and the estimated fair values of its vested stock options and warrants outstanding on that date, as this was deemed the most reliable measure of the consideration effectively transferred to acquire Nuvelo on that date. The Company estimated the net assets acquired in the Merger to be $37.2 million, including $45.5 million of cash, cash equivalents and marketable securities. In accordance with ASC 805, any excess of fair value of net assets acquired in a business combination over the acquisition consideration results in a gain on bargain purchase, and as a result, the Company recorded a gain on bargain purchase of $25.3 million.

(4) Fair Value Disclosures

As of September 30, 2013, the Company had $18.6 million of cash equivalents consisting of money market funds with maturities of 90 days or less. The Company has the ability to liquidate these investments without restriction. The Company determines fair value for these money market funds and equity securities with Level 1 inputs through quoted market prices. There were no transfers of assets between fair value hierarchy levels during the three or nine month period ended September 30, 2013.

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (exit price). Inputs used to measure fair value are classified into the following hierarchy:

·Level 1 Unadjusted quoted prices in active markets for identical assets or liabilities

·Level 2 Unadjusted quoted prices in active markets for similar assets or liabilities; unadjusted quoted prices for identical or similar assets or liabilities in markets that are not active; or inputs other than quoted prices that are observable for the asset or liability

·Level 3 Unobservable inputs for the asset or liability

Fair Value of Other Financial Instruments

The carrying amount of other financial instruments, including cash, accounts payable, and short-term notes payable approximated fair value due to their short maturities.

(5) Property and Equipment

Property and equipment consist of the following (in thousands):

	Estimated Life	September 30, 2013	December 31, 2012
Computer equipment	3 years	$ 97	$ 104
Lab equipment	5 years	142	142
Furniture and fixtures	5 years	86	93
Computer software	3 years	176	176
Leasehold improvements		8	18

	Lesser of useful life or life of the lease			
		509		533
Less accumulated depreciation and amortization		(482)		(510)
		$ 27		$ 23

For the nine months ended September 30, 2013 and 2012, and for the period from Inception through September 30, 2013, depreciation and amortization expense was $24,000, $34,000, and $1.8 million respectively.

(6) Commitments and Contingencies

The Company has or is subject to the following commitments and contingencies:

Employment Agreements

The Company maintains employment agreements with several executive employees. Most of these agreements provide for payments to be made under certain conditions related to a change in control of the Company and entitle the employee to wages and certain benefits payments not exceeding one calendar year from the date of termination without cause or by the employee for good reason. The agreements may be terminated at any time by the Company with or without cause upon written notice to the employee.

Operating Lease

On February 8, 2008, the Company entered into a lease agreement for approximately 15,000 square feet of newly constructed office facilities in Broomfield, Colorado. The office location served as the Company s primary business office. In June 2011, the Company and its landlord amended the lease mutually agreeing for the Company to relocate to another suite, comprising approximately 4,500 square feet, within the same building. The original five year term of the Lease remained unchanged. The Company s facility lease which would have originally expired in June 2013 was extended by a letter of extension through September 30 2013.

Rent expense under this lease for the nine months ended September 30, 2013 and 2012 was $44,000 and $36,000, respectively, and was $559,000 from Inception through September 30, 2013.

Effective August, 1, 2013 the Company entered into a lease agreement for approximately 5,300 square feet of office facilities in Westminster, Colorado that has served as the Company s primary business office since October 1, 2013. Below is a summary of the future minimum lease payments committed for the Company s facility in Westminster, Colorado as of September 30, 2013:

2013	$ 19,000
2014	78,000
2015	81,000
2016	62,000
Total future minimum lease payments	$ 240,000

Cardiovascular Pharmacology and Engineering Consultants, LLC, or CPEC

Under the terms of its strategic license agreement with CPEC, a licensing subsidiary of Indevus Pharmaceuticals Inc. (a wholly owned subsidiary of Endo Pharmaceuticals), holding ownership rights to certain clinical trial data of Gencaro, the Company will incur milestone and royalty obligations upon the occurrence of certain events. In August 2008, the Company paid CPEC a milestone payment of $500,000 based on the July 31, 2008 submission of its NDA to the FDA. If the FDA grants marketing approval for Gencaro, the agreement provides that the Company will owe CPEC another milestone payment of $8.0 million within six months after FDA approval. The agreement also states that the Company has the obligation to make milestone payments of up to $5.0 million in the aggregate upon regulatory marketing approval in Europe and Japan. The agreement states that the Company s royalty obligation ranges from 12.5% to 25% of revenue from the related product based on achievement of specified product sales levels, including a 5% royalty that CPEC is obligated to pay under its original license agreement for Gencaro. The Company has the right to buy down the royalties to a range of 12.5% to 17% by making a payment to CPEC within six months of regulatory approval.

(7) Equity Financings and Warrants

Private Investment in Public Equity (PIPE) Transaction

On January 22, 2013, the Company entered into a Subscription Agreement (the Purchase Agreement) with various accredited investors and its Chief Executive Officer in connection with a private placement of its common stock and

warrants. Pursuant to the Purchase Agreement, the Company sold an aggregate of 356,430 shares of its common stock and warrants to purchase up to 249,501 additional shares of its common stock for aggregate gross proceeds of approximately $1 million, before deducting estimated offering expenses payable by the Company. The net proceeds to the Company were approximately $805,000, and the private placement closed on January 25, 2013.

The common stock and warrants were sold in units consisting of one share of common stock and a warrant to purchase 0.70 shares of common stock. The purchase price for each unit was $2.81. The warrants were exercisable upon issuance, expire seven years from the date of issuance, and have an exercise price of $2.28 per share, equal to 100% of the closing bid price of ARCA s common stock on the Nasdaq Capital Market on January 22, 2013.

The Company filed a registration statement for the resale of the shares underlying the units sold in these private placements. That registration statement was declared effective by the Securities and Exchange Commission on February 14, 2013.

In connection with this transaction, the Company agreed that, subject to certain exceptions, it would not, while the warrants are outstanding, effect or enter into an agreement to effect any issuance of common stock or securities convertible into, exercisable for or exchangeable for common stock in a variable rate transaction, which means a transaction in which the Company issues or sells any convertible securities either (A) at a conversion price, exercise price or exchange rate or other price that is based upon and/or varies with the trading prices of, or quotations for, the shares of common stock at any time after the initial issuance of such convertible securities, or (B) with a conversion, exercise or exchange price that is subject to being reset at some future date after the initial issuance of the convertible securities or upon the occurrence of the specified or contingent events directly or indirectly related to our business or the market for our common stock. In addition, the Company agreed that, subject to certain exceptions, if it issues securities within one year following the closing of the offering, each investor would have the right to purchase its pro rata share of a specified portion of the securities in the future offering on the same terms, conditions and price provided for in the proposed issuance of securities.

Registered Direct Offering

On January 31, 2013, the Company entered into a subscription agreement with certain institutional investors (the Investors) in connection with its Registered Direct public offering (the Offering), pursuant to which the Company sold an aggregate of 164,636 shares of its common stock and warrants to purchase up to 65,855 additional shares of its common stock to the Investors for aggregate gross proceeds of approximately $730,000, before deducting placement agent fee and other estimated offering expenses payable by the Company. The net proceeds to the Company were approximately $616,000, and the Offering closed on February 4, 2013.

The common stock and warrants were sold in units consisting of one share of common stock and a warrant to purchase 0.40 shares of common stock. The purchase price for each unit was $4.43. The warrants were exercisable upon issuance, expire five years from the date of issuance, and have an exercise price of $4.13 per share, equal to the closing bid price of ARCA s common stock on the Nasdaq Capital Market on January 31, 2013. The Offering was effected as a takedown off the Company s S-3 Registration Statement, which became effective on April 4, 2011, pursuant to a prospectus supplement filed with the Securities and Exchange Commission on February 1, 2013. The warrant agreements provide for settlement of the warrants in unregistered shares should an effective registration statement or current prospectus not be in place at the time a warrant is exercised.

Public Offering

On June 4, 2013, the Company sold shares of its Series A Convertible Preferred Stock (Preferred Stock) and warrants to purchase common stock in a public offering for aggregate gross proceeds of $20.0 million. The Company issued 125,000 shares of Preferred Stock and warrants to purchase up to 6,250,000 shares of common stock at a purchase price of $160 per share of Preferred Stock. The net proceeds, after deducting placement agent fees and other offering expenses payable by the Company, were approximately $17.9 million. ARCA s Director and Chief Executive Officer participated in the offering, purchasing 781 shares of Preferred Stock and warrants to purchase 39,050 shares of common stock.

Each share of Preferred Stock is initially convertible into 100 shares of the Company s common stock at any time at the option of the holder; provided, that the holder will be prohibited from converting to the extent that, as a result of such conversion, the holder, together with its affiliates, would beneficially own more than 9.99% of the total number of shares of the Company s common stock then issued and outstanding. Each share of Preferred Stock has a liquidation preference of $.001 per share. The shares of Preferred Stock have no preferential dividends or redemption rights, and no voting rights except as required by law. As of September 30, 2013, 100,098 shares of the Preferred Stock had been converted into 10,009,800 shares of ARCA common stock. An additional 24,802 shares of Preferred Stock were converted into 2,480,200 shares of common stock between October 1, 2013 and October 31, 2013.

Each purchaser in the offering was issued a warrant to purchase 50 shares of the Company s common stock for each share of Preferred Stock purchased. The warrants have an exercise price of $1.60 per share, will expire on the five year anniversary of the date of issuance, and were exercisable immediately upon issuance, provided that the holder will be prohibited from exercising the warrants if, as a result of such exercise, the holder, together with its affiliates, would beneficially own more than 9.99% of the total number of shares of common stock then issued and outstanding.

The securities were sold pursuant to a placement agreement and have been registered under the Securities Act of 1933 pursuant to the Company s Registration Statement on Form S-1, as amended (No.333-187508), which was declared effective by the Securities and Exchange Commission on May 29, 2013, and the Preferred Stock and Warrants were offered and sold pursuant to a prospectus dated May 30, 2013.

In connection with the Preferred Stock financing, the Company recorded a non-cash dividend of approximately $2.0 million to recognize the intrinsic value of the embedded beneficial conversion feature. Typically, such a deemed dividend would be represented as a reduction in a company s retained earnings and an increase in additional paid in capital in recognition of the reapportionment of common shareholder value to the preferred stock purchasers. However, since ARCA has an accumulated deficit, the deemed dividend

is recognized by a reapportionment of additional paid in capital from common shareholders to additional paid in capital of preferred stock purchasers, which are combined in the Company s statement of stockholders equity.

Warrants

As of September 30, 2013, warrants to purchase approximately 8.2 million shares of common stock were outstanding at exercise prices ranging from $1.60 to $116.89, with a weighted average exercise price per share of $2.53. These warrants, which were granted as part of various financing and business agreements, expire at various times between October 2013 and January 2020. Warrants were recorded in additional paid-in capital at their estimated fair market value at the date of grant using a Black-Scholes option-pricing model.

(8) Share-based Compensation

For the three and nine month periods ended September 30, 2013 and 2012 and for the period from Inception through September 30, 2013, the Company recognized the following non-cash, share-based compensation expense in the consolidated statement of operations (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,		Period from December 17, 2001 (date of inception) to
	2013	2012	2013	2012	September 30, 2013
Research and Development	$ 7	$ 25	$ 36	$ 76	$ 626
Selling, General and Administrative	42	49	89	167	1,700
Restructuring Expense					387
Total	$ 49	$ 74	$ 125	$ 243	$ 2,713

Stock option transactions for the nine month period ended September 30, 2013 under all plans are as follows:

	# of Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (in years)
Options outstanding at December 31, 2012	144,019	$ 18.28	4.91
Changes during the period:			
Granted	731,535	1.38	
Exercised			
Forfeited, cancelled or expired	(39,113)	11.07	
Options outstanding at September 30, 2013	836,441	$ 3.84	9.39
Options exercisable at September 30, 2013	115,435	$ 18.08	6.12
Options vested and expected to vest	721,216	$ 4.20	9.31

(9) Income Taxes

In accordance with United States Generally Accepted Accounting Principles, a valuation allowance should be provided if it is more likely than not that some or all of the Company s deferred tax assets will not be realized. The Company s ability to realize the benefit of its deferred tax assets will depend on the generation of future taxable income. Due to the uncertainty of future profitable operations and taxable income, the Company has recorded a full valuation allowance against its net deferred tax assets. The Company believes its tax filing positions and deductions related to tax periods subject to examination will be sustained upon audit and, therefore, has no reserve for uncertain tax positions.

ITEM 2. MANAGEMENT S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

This Management s Discussion and Analysis of Financial Condition and Results of Operations contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, Section 21E of the Securities Exchange Act of 1934, as amended and the Private Securities Litigation Reform Act of 1995, These statements include, but are not limited to, statements regarding the Company s anticipated timing for initiation or completion of its clinical trials for any of its product candidates; the potential for Gencaro to be an effective potential treatment for atrial fibrillation and, the Company s ability to fund future operations. Such statements are based on management s current expectations and involve risks and uncertainties. Actual results and performance could differ materially from those projected in the forward-looking statements as a result of many factors, including, without limitation, the risks and uncertainties associated with: the Company s financial resources and whether they will be sufficient to meet the Company s business objectives and operational requirements; the Company s ability to complete a strategic transaction to support the continued development of Gencaro, and/or obtain additional financing; the Company s anticipated timing for initiation or completion of its clinical trials for any of its product candidates; the Company s ability to identify, develop and achieve commercial success for products and technologies; drug discovery and the regulatory approval process; estimated timelines for regulatory filings and the implications of interim or final results of the Company s clinical trials; the extent to which the Company s issued and pending patents may protect its products and technology; the potential of the Company s clinical development program to lead to the approval of the Company s New Drug Application for Gencaro; and, the impact of competitive products and technological changes. Actual results and performance could differ materially from those projected in the forward-looking statements as a result of many factors discussed herein and elsewhere. These and other factors are identified and described in more detail in ARCA s filings with the SEC, including without limitation the Company s annual report on Form 10-K for the year ended December 31, 2012, as amended, the Company s Registration Statement on Form S-1 (Registration No. 333-187508), and subsequent filings. Forward-looking statements may be identified by words including will, plan, anticipate, believe, intend, estimates, expect, should, may, potential and similar expressions. T disclaims any intent or obligation to update these forward-looking statements.

The terms ARCA, we, us, our and similar terms refer to ARCA biopharma, Inc.

Overview

We are a biopharmaceutical company whose principal focus is developing genetically-targeted therapies for cardiovascular diseases. Our lead product candidate is Gencaro (bucindolol hydrochloride), a pharmacologically unique beta-blocker and mild vasodilator that we plan to evaluate in a new clinical trial for the treatment of atrial fibrillation, or AF, in patients with heart failure and left ventricular dysfunction, or HFREF. We have identified common genetic variations in receptors in the cardiovascular system that we believe interact with Gencaro s pharmacology and may predict patient response to the drug.

AF is a disorder in which the normally regular and coordinated contraction pattern of the heart s two small upper chambers (the atria) becomes irregular and uncoordinated. The irregular contraction pattern associated with AF causes blood to pool in the atria, predisposing the formation of clots potentially resulting in stroke. AF is considered an epidemic cardiovascular disease with an estimated prevalence of at least 2.7 million Americans in 2010. The approved therapies for the treatment or prevention AF have certain disadvantages in HFREF patients, such as toxic or cardiovascular adverse effects, and most of the approved drugs for AF are contra indicated or have warnings in their prescribing information for such patients. We believe there is an unmet medical need for new AF treatments that have fewer side effects than currently available therapies and are more effective, particularly in HFREF patients.

GENETIC-AF is planned as a multi-center, randomized, double-blind clinical trial designed to compare the safety and efficacy of Gencaro to an active comparator in HFREF patients recently diagnosed with persistent AF and having beta-1 389 arginine homozygous genotype, the genotype we believe responds most favorably to Gencaro. The

primary endpoint of GENETIC-AF, time to recurrent symptomatic AF or all-cause mortality, will be measured over a twenty-four week period after the patient s AF has been electrically cardioverted through the administration of a direct current shock to restore normal heart rhythm.

We have created an adaptive design for GENETIC-AF which we plan to initiate with a Phase 2B study in approximately 200 HFREF patients with recent onset, persistent AF who have a genetic variant of the beta-1 adrenergic receptor that we believe responds most favorably to Gencaro. In addition to measuring the primary endpoint of recurrent symptomatic AF or all-cause mortality, an additional efficacy measure in the Phase 2B portion of GENETIC-AF will be AF burden, defined as a patient s percentage of time in AF per day, regardless of symptoms. All 200 patients in the Phase 2B portion of the trial will have AF burden measured by continuous monitoring, either by previously implanted cardiac resynchronization or defibrillation devices, or newly or previously inserted loop recorders. The GENETIC-AF Data Safety Monitoring Board (DSMB) will analyze selected data from the Phase 2B portion of the trial and recommend whether the trial should proceed to Phase 3 and enroll an additional 420 patients. The DSMB will make their recommendation based on analysis of selected trial data after 200 patients have been enrolled and have completed 24 weeks of follow-up, the period for measuring the trial s primary end-point. The interim analysis will focus on available data regarding AF event rates,

AF burden, and safety. Should the DSMB interim analysis conclude the data is consistent with the pre-trial statistical assumptions and that the data indicates potential for achieving statistical significance for the Phase 3 endpoint, then the DSMB may recommend the study proceed to Phase 3. The DSMB may also recommend changes to the study design before potentially proceeding to Phase 3, or it may recommend that the study not proceed to Phase 3. The Company, in consultation with the trial s clinical steering committee and the DSMB, will make the final determination on the trial s development steps. The Company believes the Phase 2B portion of the study would take approximately two and one-half years to complete from the time the first patient is enrolled until the planned DSMB interim analysis of data from the initial 200 patients. The trial is designed to compare Gencaro to the beta-blocker Toprol XL in patients with the beta-1 389 arginine homozygous genotype, which we believe responds most favorably to Gencaro. We believe data from the BEST trial indicate that Gencaro may have a genetically regulated effect in reducing or preventing AF, whereas we believe the therapeutic benefit of Toprol XL does not appear to be enhanced in patients with this genotype. A retrospective analysis of data from the BEST trial shows that the entire cohort of patients in the BEST trial treated with Gencaro had a 41% reduction in the risk of new onset AF (time-to-event) compared to placebo ($p = 0.0004$). In the BEST DNA substudy, patients with the beta-1 389 arginine homozygous genotype experienced a 74% ($p = 0.0003$) reduction in risk of AF when receiving Gencaro, based on the same analysis. The beta-1 389 arginine homozygous genotype was present in about 47% of the patients in the BEST pharmacogenetic substudy, and we estimate it is present in about 50% of the US general population.

Medtronic, Inc., a leader in medical technologies to improve the treatment of chronic diseases including cardiac rhythm disorders, has signed an agreement with us to collaborate on the GENETIC-AF trial. Under the collaboration with Medtronic, ARCA plans to conduct a substudy that will include continuous monitoring of the cardiac rhythms of all 200 patients enrolled during the Phase 2B portion, and an additional 100 patients in the Phase 3 portion, of GENETIC-AF. The collaboration will be administered by a joint ARCA-Medtronic committee. Medtronic will use its proprietary CareLink System to collect and analyze the cardiac rhythm data from the implanted Medtronic devices and provide the data to us at the close of the Phase 2B portion of the trial. Medtronic will support the reimbursement process for patients enrolled in the Phase 2B portion, and will provide financial support of unreimbursed costs for a certain number of patients in the Phase 2B portion up to a certain maximum amount per patient. If GENETIC-AF proceeds to Phase 3, we will seek to enroll an additional 100 patients in the substudy, and Medtronic will provide the agreed-on CareLink System cardiac rhythm data collection and analysis for the Phase 3 portion of the substudy, and support the reimbursement process.

We have been granted patents in the U.S., Europe, and other jurisdictions for methods of treating AF and HF patients with Gencaro based on genetic testing, which we believe may provide market exclusivity for these uses of Gencaro into at least 2026 in the U.S. and into 2025 in Europe. In addition, we believe that if Gencaro is approved, a Gencaro patent will be eligible for patent term extension based on our current clinical trial plans which, if granted, may provide market exclusivity for Gencaro into 2029 or 2030 in the U.S. and Europe.

To support the continued development of Gencaro, we completed a public equity offering in June 2013 to initiate the Phase 2B/3 GENETIC-AF trial and fund ongoing operations. In light of the substantial additional time and costs associated with the development of Gencaro, we will need to raise a significant amount of capital on acceptable terms to finance the completion of GENETIC-AF and our ongoing operations. We anticipate that our current cash and cash equivalents will be sufficient to fund our operations through at least the end of 2014. However, changing circumstances may cause us to consume capital significantly faster or slower than we currently anticipate. We have based these estimates on assumptions that may prove to be wrong, and we could exhaust our available financial resources sooner than we currently anticipate.

Results of Operations

Research and Development Expenses

Research and development, or R&D, expense is comprised of clinical, regulatory, and manufacturing process development activities and costs. Our R&D expense continues to be almost entirely generated by our activities relating to the development of Gencaro. Research and Development expense for the three months ended September 30, 2013 was $714,000 compared to $156,000 for the corresponding period of 2012, an increase of approximately $558,000. R&D expense was $1,141,000 for the nine months ended September 30, 2013 as compared to $901,000 for the corresponding period of 2012, an increase of $240,000.

Clinical expense increased approximately $134,000 for the three months ended September 30, 2013 and decreased approximately $37,000 for the nine months ended September 30, 2013. The increase in the three month period is primarily due to increase personnel costs as we have added staff to initiate and oversee our GENETIC-AF clinical trial. The decrease in the nine-month period was primarily due to reduced personnel costs from staff furloughs implemented in the third quarter of 2012.

Regulatory and manufacturing process costs increased $422,000 for the three months and $277,000 for the nine months ended September 30, 2013 compared to the corresponding periods of 2012. The increases in both the three and nine month periods ended September 30, 2013 compared to the corresponding period of 2012 is primarily due to costs of initiating production of clinical trial drug materials as well as regulatory audits of suppliers to be used in our GENETIC-AF clinical trial. A portion of the increase is also attributable to increased personnel costs as we have increased staff during the quarter to prepare and initiate our clinical trial.

R&D expenses for the remainder of 2013 are expected to increase from those of the first nine months of 2013 as we initiate our GENETIC-AF clinical trial.

Selling, General and Administrative Expenses

Selling, general and administrative expenses, or SG&A, primarily consist of personnel costs, consulting and professional fees, insurance, facilities and depreciation expenses, and various other administrative costs.

SG&A expense was $1.0 million for the three months ended September 30, 2013 as compared to $772,000 for the corresponding period in 2012, an increase of $239,000. The increase in the three months ended September 30, 2013 as compared to the corresponding period of 2012 is comprised of increased legal, accounting and other professional services of approximately $133,000 primarily related to our proxy report, annual shareholder meeting, and quarterly financial reporting activities, along with increased personnel costs and consulting fees of approximately $98,000 as we returned personnel from furlough to support initiating our GENETIC-AF clinical trial.

For the nine month period ended September 30, 2013 SG&A expense was approximately $2.9 million as compared to approximately $2.6 million for the corresponding period of 2012, an increase of $273,000. The change included increased costs for legal, consulting, and other professional services of approximately $307,000 primarily attributable to the special shareholder meeting held in the first quarter of 2013 and in support of our financing efforts completed in the first half of the year. These increases were offset by reduced board of director advisory costs of approximately $32,000 attributable to cost reduction efforts implemented in the third quarter of 2012.

SG&A expenses for the remainder of 2013 are expected to increase from those of the first nine months of 2013 as we increase our activities to support initiation of our GENETIC-AF clinical trial.

Interest and Other Income

Interest and other income was $2,000 in the three months and $3,000 in the nine months ended September 30, 2013. Interest and other income for the comparative three month and nine month periods ended September 30, 2012 were the same. We expect interest income to continue to be nominal for the remainder of 2013 due to low investment yields and utilizing our cash and cash equivalents to fund our operations

Interest and Other Expense

Interest and other expense was less than $1,000 in the three months ended September 30, 2013, compared to $1,000 for the three months ended September 30, 2012. Interest and other expense was $3,000 for the nine month periods ended September 30, 2013 and 2012. Based on our current capital structure, interest expense for the remainder of 2013 is expected to be minimal.

Liquidity and Capital Resources

Cash and Cash Equivalents

	September 30, 2013	December 31, 2012
Cash and cash equivalents	$ 18,632	$ 2,920

As of September 30, 2013, we had total cash and cash equivalents of approximately $18.6 million, as compared to $2.9 million as of December 31, 2012. The net increase of $15.7 million in the nine month period reflects the $19.3 million of net proceeds from our stock offerings completed, less approximately $3.4 million of cash used to fund operating activities and approximately $174,000 in payments on a vendor financing arrangement during the nine months ended September 30, 2013.

Cash Flows from Operating, Investing and Financing Activities

	Nine Months Ended September 30,	
	2013	2012
Net cash (used in) provided by:		
Operating activities	$ (3,416)	$ (3,408)
Investing activities	(28)	(1)
Financing activities	19,156	547
Net increase (decrease) in cash and cash equivalents	$ 15,712	$ (2,862)

Net cash used in operating activities for the nine months ended September 30, 2013 increased approximately $8,000 compared with the same period in 2012 primarily due to increased expenses discussed above.

Net cash used in investing activities for the nine months ended September 30, 2013 was approximately $28,000 representing investment in leasehold improvements associated with our office relocation compared to $1,000 used in investing activities in the nine months ended September 30, 2012.

Net cash provided by financing activities was $19.2 million for the nine months ended September 30, 2013 representing $19.3 million of net proceeds from three equity financings completed during the period, less $174,000 in payments on a vendor finance agreement. Net cash provided by financing activities of $547,000 for the nine months ended September 30, 2012 was comprised of $741,000 of net proceeds from our registered direct offering completed in August 2012, less approximately $134,000 for payments on a vendor financing arrangement and approximately $60,000 of costs incurred in 2012 for preparing and filing a registration statement for an equity financing transaction completed in December 2011.

Sources and Uses of Capital

Our primary sources of liquidity to date have been capital raised from issuances of shares of our preferred and common stock and funds provided by the merger with Nuvelo. The primary uses of our capital resources to date have been to fund operating activities, including research, clinical development and drug manufacturing expenses, license payments, and spending on capital items.

We have completed three equity-financing transactions in 2013 and raised approximately $19.3 million, net of offering costs. On January 22, 2013, we sold approximately $1 million of our common stock and warrants for common stock in a private placement transaction with accredited investors including our Chief Executive Officer. We issued 356,430 shares of common stock together with warrants to purchase 249,501 shares of common stock. The net proceeds, after deducting placement agent fees and other offering expenses, were approximately $805,000. Each unit, consisting of a share of common stock and a warrant to purchase 0.70 shares of common stock, was sold at a purchase price of $2.81 per unit. The warrants were exercisable upon issuance, expire seven years from the date of issuance, and have an exercise price of $2.28 per share. Pursuant to the terms of the Registration Rights Agreements (the Rights Agreements) entered into as part of this and prior Private Placement transactions, we filed a registration statement for the resale of the shares underlying the units sold in these private placements. That registration statement was declared effective by the Securities and Exchange Commission on February 14, 2013.

On January 31, 2013, we sold approximately $730,000 of ARCA s common stock and warrants for common stock in a Registered Direct Offering in which we issued 164,636 shares of common stock and warrants to purchase 65,855

shares of common stock. The net proceeds, after deducting placement agent fees and other offering expenses payable by us, was approximately $616,000. Each unit, consisting of a share of common stock and a warrant to purchase 0.40 shares of common stock, was sold at a purchase price of $4.43 per unit. The warrants were exercisable upon issuance, expire five years from the date of issuance, and have an exercise price of $4.13 per share. The Registered Direct Offering was effected pursuant to a prospectus supplement filed with the Securities and Exchange Commission on February 1, 2013. The warrant agreements provide for settlement of the warrants in unregistered shares should an effective registration statement or current prospectus not be in place at the time a warrant is exercised.

On June 4, 2013, we sold shares of our Series A Convertible Preferred Stock (Preferred Stock) and warrants to purchase common stock in a public offering for aggregate gross proceeds of $20 million. We issued 125,000 shares of Preferred Stock and warrants to up to purchase 6,250,000 shares of common stock at a at a purchase price of $160 per share of Preferred Stock. The net proceeds, after deducting placement agent fees and other offering expenses payable by us, were approximately $17.9 million. Each share of Preferred Stock is convertible into 100 shares of the Company s Common Stock at any time at the option of the holder. As of November 8, 2013, 100 shares of the Preferred Stock remained outstanding as 124,900 shares of the Preferred Stock had been converted into 12,490,000 shares of common stock since June 4, 2013. The Warrants have an exercise price of $1.60 per share, will expire on the five year anniversary of the date of issuance, and were exercisable immediately upon issuance. Our Chief Executive

Officer participated in the offering, purchasing 781 shares of Preferred Stock and warrants to purchase 39,050 shares of common stock.

We believe these financings have positioned us to initiate our GENETIC-AF Phase 2B/3 clinical trial for which we currently anticipate initiating patient enrollment in the first quarter of 2014. Our ability to execute our GENETIC-AF Phase 2B trial in accordance with our projected time line depends on a number of factors, including, but not limited to, the following:

- recruitment and formation of key oversight committees;

- selection and successfully entering into agreements with clinical research organizations for managing the clinical trial;

- recruitment of sufficient clinical trial sites and enrollment of patients;

- our ability to control costs associated with the clinical trial and our operations;

- our ability to retain the listing of our common stock on the Nasdaq Capital Market;

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