ARCA BIOPHARMA ANNOUNCES FISCAL YEAR 2017 FINANCIAL RESULTS AND PROVIDES CORPORATE UPDATE

ARCA is Requesting a Meeting with the U.S. FDA for the Second Quarter of 2018 to Review Gencaro Phase 2 Data and Future Development Plan

Westminster, CO, March 22, 2018 – ARCA biopharma, Inc. (Nasdaq: ABIO), a biopharmaceutical company applying a precision medicine approach to developing genetically-targeted therapies for cardiovascular diseases, today reported financial results for the year ended December 31, 2017.

"During 2017, we continued to make progress on our lead development program as we completed the GENETIC-AF clinical trial evaluating Gencaro as potentially the first genetically-targeted treatment for atrial fibrillation," commented Dr. Michael Bristow, ARCA's President and Chief Executive Officer. "We reported top-line Phase 2B results for the GENETIC-AF clinical trial in February 2018 and are requesting a meeting with the U.S. FDA for the second quarter of 2018 to review the data and future development plans."

2017 Summary Financial Results

Cash, cash equivalents and marketable securities totaled $11.8 million as of December 31, 2017, compared to $23.5 million as of December 31, 2016. The Company raised net proceeds of approximately $3.4 million in January 2018 from sales of its common stock under its "at-the-market" offering facility. ARCA believes that its current cash, cash equivalents and marketable securities will be sufficient to fund its operations, at its projected cost structure, through the end of 2018.

Research and development (R&D) expenses for the year ended December 31, 2017 totaled $14.1 million compared to $12.3 million for 2016. The $1.7 million increase in research and development expenses in 2017 as compared to 2016 was primarily due to increased expenses for the GENETIC-AF clinical trial. The Company expects R&D expenses in 2018 to be lower than 2017 as the GENETIC-AF clinical trial has been completed.

General and administrative (G&A) expenses for the year ended December 31, 2017 were $4.6 million compared to $4.3 million in 2016. ARCA expects G&A expenses in 2018 to be consistent with those in 2017 as it maintains administrative activities to support ongoing operations.

Total operating expenses for the year ended December 31, 2017 were $18.7 million compared to $16.6 million in 2016. The increase in total operating expenses for 2017 was primarily due to the increase in R&D expense due to the increased expense of the GENETIC-AF clinical trial.

Net loss was $18.5 million, or $1.77 per share, for 2017 compared to $16.4 million, or $1.81 per share, for 2016.

About ARCA biopharma

ARCA biopharma is dedicated to developing genetically-targeted therapies for cardiovascular diseases through a precision medicine approach to drug development. ARCA's lead product candidate, Gencaro™ (bucindolol hydrochloride), is an investigational, pharmacologically unique beta-blocker and mild vasodilator being developed for the potential treatment of patients with atrial fibrillation (AF) and chronic heart failure with reduced left ventricular ejection fraction (HFrEF) which recently completed a Phase 2B clinical trial. ARCA has identified common genetic variations that it believes predict individual patient response to Gencaro, giving it the potential to be the first genetically-targeted AF prevention treatment. ARCA has a collaboration with Medtronic, Inc. for support of the GENETIC-AF trial. The Gencaro development program has been granted Fast Track designation by FDA. ARCA also plans to develop AB171, a thiol-substituted isosorbide mononitrate, as a potential genetically-targeted treatment for peripheral arterial disease (PAD) and for heart failure (HF). For more information, please visit www.arcabio.com.

Safe Harbor Statement

This press release contains "forward-looking statements" for purposes of the safe harbor provided by the Private Securities Litigation Reform Act of 1995. These statements include, but are not limited to, statements regarding the ability of ARCA's financial resources to support its operations through the end of 2018, potential future development plans for Gencaro, the expected features and characteristics of Gencaro or AB171, including the potential for genetic variations to predict individual patient response to Gencaro, Gencaro's potential to treat AF, AB171's potential to treat HF, future treatment options for patients with AF, and the potential for Gencaro to be the first genetically-targeted AF prevention treatment. 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: ARCA's financial resources and whether they will be sufficient to meet its business objectives and operational requirements; ARCA may not be able to raise sufficient capital on acceptable terms, or at all, to continue development of Gencaro or to otherwise continue operations in the future; results of earlier clinical trials may not be confirmed in future trials; the protection and market exclusivity provided by ARCA's intellectual property; risks related to the drug discovery and the regulatory approval process; and, the impact of competitive products and technological changes. These and other factors are identified and described in more detail in ARCA's filings with the Securities and Exchange Commission, including without limitation ARCA's annual report on Form 10-K for the year ended December 31, 2017, and subsequent filings. ARCA disclaims any intent or obligation to update these forward-looking statements.

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ARCA BIOPHARMA, INC.
BALANCE SHEET DATA
(in thousands)

	December 31, 2017	December 31, 2016
Cash, cash equivalents & marketable securities	$11,752	$23,515
Working capital	$10,229	$19,049
Total assets	$12,365	$24,629
Total stockholders' equity	$10,275	$22,194

ARCA BIOPHARMA, INC.

STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS

	Years Ended December 31,	
	2017	**2016**
	(in thousands, except share and per share amounts)	
Costs and expenses:		
Research and development	$ 14,076	$ 12,348
General and administrative	4,636	4,265
Total costs and expenses	18,712	16,613
Loss from operations	(18,712)	(16,613)
Interest and other income	167	169
Interest expense	(6)	—
Loss before income taxes	(18,551)	(16,444)
Income tax benefit	61	—
Net loss	$ (18,490)	$ (16,444)
Change in unrealized loss on marketable securities	17	(19)
Comprehensive loss	$ (18,473)	$ (16,463)
Net loss per share:		
Basic and diluted	$ (1.77)	$ (1.81)
Weighted average shares outstanding:		
Basic and diluted	10,431,391	9,067,438