Christopher Graybill Joins ARCA as Vice President, Clinical Development

Westminster, CO, May 5, 2021 – ARCA biopharma, Inc. (Nasdaq: ABIO), a biopharmaceutical company applying a precision medicine approach to developing genetically targeted therapies for cardiovascular diseases, today announced that Christopher Graybill, Ph.D., has joined ARCA as Vice President, Clinical Development.

Dr. Michael Bristow, ARCA's President and Chief Executive Officer, commented, "We are delighted to welcome Christopher to ARCA as Vice President of Clinical Development. His over 14 years of experience in the biotechnology and medical device industries, supporting global clinical strategy, clinical trial planning and conduct, and other aspects of product development including in the cardiovascular space, will be a tremendous asset as we continue to advance the development of rNAPc2 and Gencaro."

Prior to joining ARCA, Dr. Graybill served in multiple clinical development roles at Terumo BCT, from 2015 to 2021, including Senior Manager of Global Clinical Affairs, Manager of Clinical Research, and Manager of Scientific/Clinical Medical Writing. Prior to that, he worked at DaVita Clinical Research, PRA International, Myogen, Inc., and Gilead Sciences. Dr. Graybill has authored numerous scientific and clinical publications. He earned a B.S. in Biochemistry from Susquehanna University and a Ph.D. in Biochemistry and Molecular Pharmacology from the Graduate School of Biomedical Sciences at the University of Massachusetts.

About ARCA biopharma

ARCA biopharma is dedicated to developing genetically targeted therapies for cardiovascular diseases through a precision medicine approach to drug development. ARCA is developing rNAPc2 as a potential treatment for diseases caused by RNA viruses, initially focusing on COVID-19. The U.S. FDA has granted Fast Track designation to the rNAPc2 development program, currently in Phase 2 clinical testing. ARCA is also developing Gencaro™ (bucindolol hydrochloride), an investigational, pharmacologically unique beta-blocker and mild vasodilator, as a potential treatment for atrial fibrillation in heart failure patients. 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. The U.S. FDA has granted the Gencaro development program Fast Track designation and a Special Protocol Assessment (SPA) agreement. For more information, please visit www.arcabio.com or follow the Company on LinkedIn.

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 potential future development plans for rNAPc2 and Gencaro,

the expected features and characteristics of rNAPc2 and Gencaro, including the potential for genetic variations to predict individual patient response to Gencaro, Gencaro's potential to treat atrial fibrillation, rNAPc2's potential to treat COVID-19, 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 rNAPc2 or 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, 2020, and subsequent filings. ARCA disclaims any intent or obligation to update these forward-looking statements.

Investor & Media Contact:
Derek Cole
720.940.2163
derek.cole@arcabio.com

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