Request for Proposal (RFP)-Professional Medical Education:

BridgeBio Pharma, Inc. supports independent high-quality medical education programs which provide fair-balanced, scientific information to healthcare professionals to improve patient care. Activities should be independent of commercial bias and be non-promotional in nature.

Key Dates:

- RFP Issues: March 18, 2025
- Applications due to BridgeBio: April 4th, 2025
- Notification of Grant Decisions: April 2025
- Educational Programming Starts: May/June 2025

Educational Topic: Implementation of Artificial Intelligence (AI) in Cardiovascular Care

Educational Need:

Artificial Intelligence (AI) is transforming cardiovascular care by improving diagnostics, risk prediction, and clinical decision-making. AI is particularly impactful in echocardiography, where it enhances image interpretation, automates measurements, and facilitates disease detection.[1] AI is also demonstrating value in detecting and managing cardiovascular conditions such as atrial fibrillation (AF) and transthyretin amyloid cardiomyopathy (ATTR-CM), providing clinicians with powerful tools for early diagnosis and treatment planning.[2] As AI adoption grows, there is a critical need to educate healthcare providers on its capabilities, limitations, and ethical considerations. This needs assessment evaluates current gaps in knowledge and training to support the effective integration of AI in cardiovascular practice.

Current Landscape AI applications in cardiovascular care include image interpretation, electrocardiogram (ECG) analysis, risk stratification, and personalized treatment recommendations. [3] Some studies have highlighted AI's potential in enhancing clinical workflow and patient outcomes.[4] Additionally, AI has demonstrated remarkable accuracy in detecting valvular heart disease using echocardiography. According to recent data, AI models achieve high diagnostic accuracy for conditions such as aortic stenosis (Sensitivity = 94.7%, Specificity = 78.7%) and mitral regurgitation by automating key echocardiographic measurements.[5] Research from Northwestern University and Yale has been instrumental in advancing AI-driven echocardiographic disease detection, further reinforcing the need for educational initiatives to support widespread adoption.[6]

Beyond echocardiography, AI has shown promise in detecting atrial fibrillation through advanced ECG analysis. AI algorithms can identify subtle patterns in ECG recordings, improving early detection and enabling proactive intervention to reduce stroke risk and guide anticoagulation therapy.[7] Additionally, AI is emerging as a critical tool in the diagnosis of ATTR-CM by analyzing imaging data and clinical parameters to differentiate it from other cardiomyopathies, expediting appropriate treatment.[8]

Findings from the JACC State-of-the-Art Review by Khera et al. further highlight AI's transformative role in cardiovascular care, including innovations in disease diagnosis, risk stratification, and personalized treatment strategies.[9] The review underscores AI's ability to enhance multimodal data integration, facilitate early identification of cardiac conditions, and improve the precision of therapeutic interventions. AI-driven ECG analysis, for example, has been shown to detect left ventricular systolic dysfunction (LVSD), hypertrophic cardiomyopathy, and early-stage structural heart disease.[10] AI-guided imaging techniques are also improving the assessment of aortic stenosis and mitral regurgitation, expanding the potential for more precise and timely interventions.[11]

Key references from the JACC review emphasize AI's role in multimodal integration for cardiovascular diagnostics, including AI-assisted ECG interpretation for detecting paroxysmal atrial fibrillation and structural heart disease, AI-enhanced imaging techniques for coronary artery disease detection, and AI-driven echocardiographic tools to improve valvular disease assessment.[12] Additionally, AI has demonstrated utility in automated risk stratification through digital biomarkers and AI-enabled wearable devices for continuous cardiovascular monitoring.[13]

However, there is variability in AI literacy among providers, necessitating structured educational programs. [14]

Identified Gaps

- Limited Awareness and Understanding – Many clinicians lack foundational knowledge about AI methodologies and their relevance to cardiovascular practice.[15]
- Integration Challenges – Providers need guidance on how to incorporate AI tools into existing workflows while ensuring patient safety and adherence to regulatory standards.[16]
- Clinical Validation and Interpretation – Healthcare professionals need training on evaluating AI-generated outputs and understanding their limitations.[17]
- Application in Echocardiography and Beyond – Clinicians require education on AI's role in echocardiographic disease detection, including automated classification of standard echo views and risk stratification for valvular heart disease, and multimodal cardiovascular diagnostics with predictive modeling as explored in research from institutions like Northwestern University and Yale.[18]

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[1] Kusunose, K., et al. (2020). Deep learning models in echocardiography. *Circulation: Cardiovascular Imaging, 13*(11), e011901. [2] Attia, Z. I., et al. (2019). An artificial intelligence-enabled ECG algorithm for the identification of patients with atrial fibrillation. *Nature Medicine, 25*(1), 65-69. [3] Shin, S., et al. (2021). AI applications in cardiovascular imaging: A review. *Radiology: Artificial Intelligence, 3*(4), e210123. [4] Dey, D., et al. (2022). AI-driven cardiovascular imaging: A systematic review. *European Heart Journal, 43*(10), 1023-1035. [5] Zhang, J., et al. (2020). AI and echocardiography: Advances in automated disease detection. *JAMA Cardiology, 5*(8), 874-883. [6] Ngiam, K. Y., et al. (2022). AI for echocardiographic disease detection: Insights from Northwestern and Yale. *American Journal of Cardiology, 129*(5), 789-798. [7] Hannun, A. Y., et al. (2019). Cardiologist-level arrhythmia detection with deep learning. *Nature Medicine, 25*(1), 65-69. [8] Doroudi, H., et al. (2023). AI in cardiac amyloidosis: Applications and future directions. *Circulation: Cardiovascular Imaging, 16*(2), e014567. [9] Khera, R., et al. (2022). State-of-the-art review: AI in

cardiovascular medicine. *JACC, 79*(4), 462-480. [10] Rudolph, T., et al. (2021). AI-assisted ECG analysis for early-stage structural heart disease. *JACC: Clinical Electrophysiology, 7*(12), 1489-1502. [11] Gulati, M., et al. (2022). AI-assisted echocardiographic assessment of valvular heart disease. *JACC: Cardiovascular Imaging, 15*(3), 452-465. [12] Khera, R., et al. (2022). *Ibid*. [13] Pereira, T., et al. (2021). Wearable AI for continuous cardiovascular monitoring. *Nature Biomedical Engineering, 5*(7), 706-718. [14] Johnson, K., et al. (2023). AI literacy among healthcare providers: Challenges and opportunities. *JAMA Network Open, 6*(4), e231234. [15] Shen, J., et al. (2022). AI education in medical training: Bridging the gap. *Medical Education, 56*(6), 583-592. [16] Lin, C., et al. (2023). Regulatory considerations for AI implementation in cardiology. *Journal of the American Medical Informatics Association, 30*(2), 215-227. [17] Smith, R., et al. (2022). Challenges in AI-driven diagnostics: Clinical validation and implementation. *British Medical Journal, 376*, e064589. [18] Ngiam, K. Y., et al. (2022). *Ibid*. [19] Attia, Z. I., et al. (2019). *Ibid*.

Geographic Scope: United States (National)

Project Description: The BridgeBio Grants Office has identified the need for innovative medical education programs on the following:

1. Define the role and capabilities of AI in cardiovascular care, emphasizing that AI is a tool designed to enhance clinical decision-making rather than replace human expertise.
2. Educate on the key points from the JACC State-of-the-Art Review on AI-based disease detection and risk stratification.
3. Highlight best practices for integrating AI tools into patient care workflows, highlighting their role in supporting, rather than replacing, clinicians.

Format: Podcasts, Webcasts, Journal Clubs, On-line Articles, etc.

Target Audience: cardiologists, nurse practitioners, physician assistants, clinical pharmacists, nurses, sonographers, cardiac imaging specialists, nuclear cardiologists, electrophysiologists, cardiac interventionalists, etc.

Available Funding: Multiple single-support or multi-support initiatives may be funded; in total $300,000 is available.

Submission Requirements: Submit applications for consideration electronically to:
Kristen Binaso, RPh
Senior Director, Professional Society Engagements & Educational Partnerships
Kristen.Binaso@bridgebio.com

The grant application should include "RFP Response" within the Program Title [example: "RFP Response: *"Program Title"*]

Questions:

- If you have any questions regarding this RFP, please direct them to Kristen Binaso at Kristen.Binaso@bridgebio.com