June 10, 2024  
AHA Scientific Sessions Early Career Awards  
Sponsor Letter

Dear Selection Committee and the Council on Epidemiology and Prevention:

I am writing to support Dr. Anish S. Shah, MD, MS, for the Elizabeth Barrett-Connor Research Award in Epidemiology and Prevention.

Dr. Shah’s research on the impact of social determinants of health on atrial fibrillation (AF) symptom burden demonstrates his multidisciplinary skills and highlights his potential as an independent and successful investigator.

As the Chief of the Division of Cardiology at the University of Illinois Chicago (UIC), I oversee several NIH and VA-funded research projects. As a cardiologist with specialty training in electrophysiology and a research focus on cardiac arrhythmias and health disparities, my work closely aligns with Dr. Shah’s interests and current project. My background includes a strong history of clinical and research mentorship, with over 30 trainees, including eight K08/K23 awardees, four of whom have transitioned to their first R01s. I am the principal investigator (PI) for the institutional T32 (TPIPCVM: Training Program in Personalized Cardiovascular Medicine) and have mentored Dr.  Shah through his F32 award and his ongoing K23 application.

Dr. Shah’s manuscript, central to this award application, investigates the effect of social determinants on AF symptom burden through a prospective, observational cohort study. The study enrolled 873 participants at baseline and followed 515 participants longitudinally. Key findings include a 5-8 point relative decrease in AFEQT scores for participants from higher neighborhood deprivation levels and minority race-ethnicity groups, primarily Non-Hispanic Black participants. These results underscore the influence of social factors on AF outcomes, highlighting the importance of considering these variables in clinical management.

The team science approach required in this project cannot be understated; however, Dr. Shah’s role in this study was instrumental and his contributions essential to its success. Not only is he the first author on the manuscript, but I have also asked him to be co-corresponding author on this submission, a critical role for a young academic. Specifically, Dr. Shah’s contributions to the study were comprehensive:

* **Study Design**: Conceptualized the study framework, utilizing repeated patient-reported outcomes to evaluate the importance and longitudinal impact of social determinants.
* **Data Collection**: Led a team of research coordinators to capture patient-reported outcomes and developed a system to collect clinical and social factors, such as geocodes to determine census tracts.
* **Data Analysis**: Conducted complex statistical analyses, generating models, tables, and figures to best explain the findings.
* **Writing**: Drafted the original manuscript, which was well-written with clear and concise language, and incorporated feedback promptly.

There are additional aspects of the evolution of this project that merit comment. Our lab is primarily a translational lab, focusing on genetic and molecular mechanisms coupled with specific clinical phenotypes. Dr. Shah, with his background in epidemiology and biostatistics, has leveraged these skills to complement our lab’s strengths, conceiving and carrying out projects successfully. In many aspects, from writing to analysis, he functioned essentially as an independent investigator, with me serving as a mentor and guide.

Dr. Shah chose to pursue this project due to his insightful understanding of the importance of symptom elicitation in a disease primarily managed through clinical symptom adjudication. I fully agree with his perspective, as understanding the full impact of a disease on a patient is crucial for effective intervention planning.

Furthermore, Dr. Shah’s contributions were not limited to his own work. He took the initiative to mentor junior colleagues in the lab, helping them understand statistical concepts and assisting with manuscript writing. His relative independence and willingness to guide others demonstrate that he has entered the next phase of his career, transitioning from a trainee to a mentor and leader.

Beyond this manuscript, Dr. Shah has shown consistent scholarly productivity during his cardiology training and F32 fellowship, with multiple first-author publications, presentations at national conferences, and publication of several open-source software packages. His research on autonomic reactivity to stress and the genetic components of atrial flutter, both published works, further exemplify his dedication and expertise at the intersection of epidemiology and electrophysiology.

In summary, Dr. Anish Shah’s objective, data-driven research on social determinants and AF symptom burden, combined with his technical skills and consistent productivity, make him an excellent candidate for the Elizabeth Barrett-Connor Research Award. I fully support his application and believe he will continue to advance our understanding of cardiovascular epidemiology. For further questions, please contact me at darbar@uic.edu or 615-887-9032.

Sincerely,

Dawood Darbar, MBChB, MD  
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Director, Center for Cardiovascular Research  
Associate Director, Medical Scientist Training Program  
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