Stanford

# Joshua Keefe, MD, PhD

Resident in Medicine

## Bio

### BIO

Joshua Keefe is a resident physician in the Stanford Internal Medicine Residency as part of the Translational Investigator Program. Josh received his BS in Bioengineering from UCLA and subsequently completed a postbaccalaureate research fellowship at the Framingham Heart Study before obtaining his MD and PhD from the Baylor College of Medicine. Josh completed his PhD under the mentorship of Dr. Xander Wehrens studying the role of macrophage-mediated inflammation in postoperative atrial fibrillation.

### CLINICAL FOCUS

- Residency
- Internal Medicine

### HONORS AND AWARDS

- MSTP Thesis Publication Award, Baylor College of Medicine (05/2026)
- Ruth L. Kirschstein NRSA Predoctoral Fellowship (F30), NIH/NHLBI (08/2024-05/2026)
- McNair MD/PhD Scholar, The Robert and Janice McNair Foundation (10/2021-05/2026)
- Cullen MD/PhD Fellow, Cullen Trust for Higher Education (06/2020-05/2026)
- Deborah K. Martin Award for Outstanding Graduate Student, Baylor College of Medicine (12/2024)
- 1st Place Oral Presentation, Baylor College of Medicine MSTP Symposium (09/2024)
- Jeffrey M. Rosen Presentation of the Year Award, Baylor College of Medicine MSTP (09/2024)
- Dean's Award of Excellence, Baylor College of Medicine (08/2024)
- 1st Place Presentation, Baylor College of Medicine Department of Internal Medicine Symposium (06/2023)

### PROFESSIONAL EDUCATION

- MD, Baylor College of Medicine (2026)
- PhD, Baylor College of Medicine , Integrative Physiology (2025)
- BS, University of California Los Angeles , Bioengineering (2017)

### PATENTS

- Kamei DT, Wu BM, Pereira DY, Wu CM, Yee MF, Keefe JA, Pearce CC, Dailamy AA, Wong VK, Le NK. "United States Patent 11327075 Hydrogel Platform for Aqueous Two-Phase Concentration of a Target to Enhance its Detection", University of California - Los Angeles, May 10, 2022

# Publications

## PUBLICATIONS

- **Atrial fibroblast-derived macrophage migration inhibitory factor promotes atrial macrophage accumulation in postoperative atrial fibrillation.** *JCI insight*
  Keefe, J. A., Navarro-Garcia, J. A., Zhao, S., Chelu, M. G., Wehrens, X. H.
  2025; 10 (18)

- **Macrophage-mediated IL-6 signaling drives ryanodine receptor-2 calcium leak in postoperative atrial fibrillation.** *The Journal of clinical investigation*
  Keefe, J. A., Aguilar-Sanchez, Y., Navarro-Garcia, J. A., Ong, I., Li, L., Paasche, A., Abu-Taha, I., Tekook, M. A., Bruns, F., Zhao, S., Kamler, M., Shen, Y. H., Chelu, et al
  2025; 135 (9)

- **Immune cells and arrhythmias.** *Cardiovascular research*
  Keefe, J. A., Wang, J., Song, J., Ni, L., Wehrens, X. H.
  2025; 121 (3): 382-395

- **Tachycardia and Atrial Fibrillation-Related Cardiomyopathies: Potential Mechanisms and Current Therapies.** *JACC. Heart failure*
  Keefe, J. A., Garber, R., McCauley, M. D., Wehrens, X. H.
  2024; 12 (4): 605-615

- **Cyclic AMP-dependent regulation of ryanodine receptors in healthy and diseased hearts.** *Journal of molecular and cellular cardiology*
  Hulsurkar, M. M., Ong, I., Keefe, J. A., Abu-Taha, I. H., Dobrev, D., Wehrens, X. H.
  2026; 211: 53-62

- **Macrophage Migration Inhibitory Factor: the Next Adjunct to Reperfusion Therapy in Acute Myocardial Infarction?** *Cardiovascular drugs and therapy*
  Keefe, J. A., Wehrens, X. H.
  2025; 39 (6): 1239-1242

- **Multiomic and electrophysiologic analyses reveal that an inherited MRC2 variant causes fibroblast dysfunction and increased atrial fibrillation susceptibility.** *American journal of physiology. Heart and circulatory physiology*
  Ho, K. S., Keefe, J. A., Zhao, S., Hulsurkar, M. M., Jung, S. Y., Samee, M. A., Wehrens, X. H.
  2025; 329 (5): H1055-H1071

- **Mechanisms underlying atrial fibrillation in chronic kidney disease.** *Journal of molecular and cellular cardiology*
  Navarro-Garcia, J. A., Keefe, J. A., Song, J., Li, N., Wehrens, X. H.
  2025; 205: 37-51

- **A mechanistic LNK between inflammation and atrial fibrillation?** *Cardiovascular research*
  Keefe, J. A., Zhao, S., Wehrens, X. H.
  2024; 120 (8): 814-816

- **Long-term efficacy and safety of cardiac genome editing for catecholaminergic polymorphic ventricular tachycardia.** *The journal of cardiovascular aging*
  Moore, O. M., Aguilar-Sanchez, Y., Lahiri, S. K., Hulsurkar, M. M., Alberto Navarro-Garcia, J., Word, T. A., Keefe, J. A., Barazi, D., Munivez, E. M., Moore, C. T., Parthasarathy, V., Davidson, J., Lagor, et al
  2024; 4 (1)

- **Blocking p38γ/δ, a molecular cardiac defibrillator.** *Nature cardiovascular research*
  Keefe, J. A., Wehrens, X. H.
  2023; 2 (12): 1104-1106

- **Chronic kidney disease promotes atrial fibrillation via inflammasome pathway activation.** *The Journal of clinical investigation*
  Song, J., Navarro-Garcia, J. A., Wu, J., Saljic, A., Abu-Taha, I., Li, L., Lahiri, S. K., Keefe, J. A., Aguilar-Sanchez, Y., Moore, O. M., Yuan, Y., Wang, X., Kamler, et al
  2023; 133 (19)

- **Endothelial cell dysfunction: the culprit for cardiac denervation in aging?** *The journal of cardiovascular aging*
  Moore, O. M., Keefe, J. A., Wehrens, X. H.
  2023; 3 (4)
- **Anti-Ro/SSA Antibodies in Atrioventricular Block: Innocent Bystander or Mechanistic Driver?** *JACC. Clinical electrophysiology*
  Keefe, J. A., Wehrens, X. H.
  2023; 9 (8 Pt 3): 1649-1651
- **Mouse models of spontaneous atrial fibrillation.** *Mammalian genome : official journal of the International Mammalian Genome Society*
  Keefe, J. A., Hulsurkar, M. M., Reilly, S., Wehrens, X. H.
  2023; 34 (2): 298-311
- **Cardiac function, structural, and electrical remodeling by microgravity exposure.** *American journal of physiology. Heart and circulatory physiology*
  Sy, M. R., Keefe, J. A., Sutton, J. P., Wehrens, X. H.
  2023; 324 (1): H1-H13
- **Role of Ca2+ in healthy and pathologic cardiac function: from normal excitation-contraction coupling to mutations that cause inherited arrhythmia.** *Archives of toxicology*
  Keefe, J. A., Moore, O. M., Ho, K. S., Wehrens, X. H.
  2023; 97 (1): 73-92
- **Abnormalities in cardiac and inflammatory biomarkers in ambulatory subjects after COVID-19 infection.** *International journal of cardiology. Heart & vasculature*
  Keefe, J. A., Avadhanula, V., Nicholson, E. G., Devaraj, S., Piedra, P. A., Bozkurt, B., Wehrens, X. H.
  2022; 43: 101144
- **Diagnosing atrial fibrillation: Can we do better than the ECG?** *Heart rhythm*
  Ho, K. S., Keefe, J. A., Wehrens, X. H.
  2022; 19 (9): 1459-1460
- **Common disease-promoting signalling pathways in heart failure and atrial fibrillation: putative underlying mechanisms and potential therapeutic consequences.** *Cardiovascular research*
  Keefe, J. A., Wehrens, X. H., Dobrev, D.
  2022; 118 (11): 2397-2399
- **In-depth characterization of a mouse model of postoperative atrial fibrillation.** *The journal of cardiovascular aging*
  Keefe, J. A., Navarro-Garcia, J. A., Ni, L., Reilly, S., Dobrev, D., Wehrens, X. H.
  2022; 2
- **An Integrative Genomic Strategy Identifies sRAGE as a Causal and Protective Biomarker of Lung Function.** *Chest*
  Keefe, J., Yao, C., Hwang, S. J., Courchesne, P., Lee, G. Y., Dupuis, J., Mizgerd, J. P., O'Connor, G., Washko, G. R., Cho, M. H., Silverman, E. K., Levy, D.
  2022; 161 (1): 76-84
- **Integrative Genomic Analysis Reveals Four Protein Biomarkers for Platelet Traits.** *Circulation research*
  Lee, D. H., Yao, C., Bhan, A., Schlaeger, T., Keefe, J., Rodriguez, B. A., Hwang, S. J., Chen, M. H., Levy, D., Johnson, A. D.
  2020; 127 (9): 1182-1194
- **Epigenome-wide association study of DNA methylation and microRNA expression highlights novel pathways for human complex traits.** *Epigenetics*
  Huan, T., Mendelson, M., Joehanes, R., Yao, C., Liu, C., Song, C., Bhattacharya, A., Rong, J., Tanriverdi, K., Keefe, J., Murabito, J. M., Courchesne, P., Larson, et al
  2020; 15 (1-2): 183-198
- **Lipidomic profiling identifies signatures of metabolic risk.** *EBioMedicine*
  Yin, X., Willinger, C. M., Keefe, J., Liu, J., Fernández-Ortiz, A., Ibáñez, B., Peñalvo, J., Adourian, A., Chen, G., Corella, D., Pamplona, R., Portero-Otin, M., Jove, et al
  2020; 51: 102520

- **Genome-wide identification of DNA methylation QTLs in whole blood highlights pathways for cardiovascular disease.** *Nature communications*
  Huan, T., Joehanes, R., Song, C., Peng, F., Guo, Y., Mendelson, M., Yao, C., Liu, C., Ma, J., Richard, M., Agha, G., Guan, W., Almli, et al
  2019; 10 (1): 4267
- **Evidence for a Causal Role of the SH2B3-β2M Axis in Blood Pressure Regulation.** *Hypertension (Dallas, Tex. : 1979)*
  Keefe, J. A., Hwang, S. J., Huan, T., Mendelson, M., Yao, C., Courchesne, P., Saleh, M. A., Madhur, M. S., Levy, D.
  2019; 73 (2): 497-503
- **Genome-wide mapping of plasma protein QTLs identifies putatively causal genes and pathways for cardiovascular disease.** *Nature communications*
  Yao, C., Chen, G., Song, C., Keefe, J., Mendelson, M., Huan, T., Sun, B. B., Laser, A., Maranville, J. C., Wu, H., Ho, J. E., Courchesne, P., Lyass, et al
  2018; 9 (1): 3268
- **Multigenerational memory and adaptive adhesion in early bacterial biofilm communities.** *Proceedings of the National Academy of Sciences of the United States of America*
  Lee, C. K., de Anda, J., Baker, A. E., Bennett, R. R., Luo, Y., Lee, E. Y., Keefe, J. A., Helali, J. S., Ma, J., Zhao, K., Golestanian, R., O'Toole, G. A., Wong, et al
  2018; 115 (17): 4471-4476