



Fikunwa Kolawole

MD Student with Scholarly Concentration in Bioengineering / Cardiovascular-Pulmonary Sciences, expected graduation Spring 2028

Bio

BIO

Fikunwa is a mechanical engineering Ph.D. candidate in the cardiovascular Magnetic Resonance Lab (Ennis Lab) in the Stanford Radiology Department. His research, which is at the intersection between medicine and engineering, is focused on developing mechanics-based clinical biomarkers for heart disease. Through his research, he aims to establish a comprehensively validated and clinically viable tool for estimating in vivo heart tissue stiffness to better understand and manage heart failure.

He began his academic journey as a mechanical engineering undergraduate student at Howard University during which time he also worked as a researcher at the FDA's department of applied mechanics, characterizing the mechanical response of metals used in implantable cardiovascular devices. At Howard, he also supported research in the Applied Mechanics and Materials Lab and Biosensors Lab, as an undergraduate research assistant. Upon completing his undergraduate studies, in 2019, he joined Stanford University's mechanical engineering department. He is also affiliated with the Radiology departments at Stanford and the Veterans Administration Palo Alto Health Care System. He is deeply passionate about empowering minority students to pursue STEM careers. Additionally, he is a fellow of the Bio-X, Stanford's Interdisciplinary biosciences institute

INSTITUTE AFFILIATIONS

- Member (Student), Cardiovascular Institute

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

- Trainee, International Society of Magnetic Resonance in Medicine (2020 - present)

EDUCATION AND CERTIFICATIONS

- Bachelor of Science, Howard University , Mechanical Engineering (2019)
- Doctor of Philosophy, Stanford University , ME-PHD (2023)
- Master of Science, Stanford University , ME-MS (2021)
- MS, Stanford University , Mechanical Engineering (Biomechanics) (2021)
- BS, Howard University , Mechanical Engineering (2019)

SERVICE, VOLUNTEER, AND COMMUNITY WORK

- Summer First, Program Coordinator (2/1/2020)
- Vice Provost for Graduate Education, Strategic Vision Team Member (9/1/2021)
- Black Graduate Students Association, Stanford University, Co-President (6/1/2021)

Research & Scholarship

RESEARCH INTERESTS

- Equity in Education

LAB AFFILIATIONS

- Daniel Ennis, Cardiac MRI Research Group (9/2/2019)
- Marc Levenston, Soft Tissue Biomechanics Lab (9/2/2019)
- Ellen Kuhl, Living Matter Lab (9/2/2019)

Publications

PUBLICATIONS

- **Ex-vivo functional and mechanical assessment of human endopelvic fascia in men undergoing radical prostatectomy.** *World journal of urology*
Abdalla, A. S., Chen, H., Kolawole, F. O., Nolley, R., Kao, C. S., Dobberfuhr, A. D., Gill, H. S.
2025; 43 (1): 209
- **Characterizing variability in passive myocardial stiffness in healthy human left ventricles using personalized MRI and finite element modeling.** *Scientific reports*
Kolawole, F. O., Wang, V. Y., Freytag, B., Loecher, M., Cork, T. E., Nash, M. P., Kuhl, E., Ennis, D. B.
2025; 15 (1): 5556
- **Validating MRI-Derived Myocardial Stiffness Estimates Using In Vitro Synthetic Heart Models.** *Annals of biomedical engineering*
Kolawole, F. O., Peirlinck, M., Cork, T. E., Levenston, M., Kuhl, E., Ennis, D. B.
2023
- **On the impact of vessel wall stiffness on quantitative flow dynamics in a synthetic model of the thoracic aorta.** *Scientific reports*
Zimmermann, J. n., Loecher, M. n., Kolawole, F. O., Bäuml, K. n., Gifford, K. n., Dual, S. A., Levenston, M. n., Marsden, A. L., Ennis, D. B.
2021; 11 (1): 6703
- **Quantitative Hemodynamics in Aortic Dissection: Comparing in Vitro MRI with FSI Simulation in a Compliant Model** *Functional Imaging and Modeling of the Heart*
Zimmermann, J., Loecher, M., Kolawole, F., Bäuml, K., Gifford, K., Dual, S. A., Levenston, M. E., Marsden, A., Ennis, D. B.
2021: 575–586
- **A Framework for Evaluating Myocardial Stiffness Using 3D-Printed Heart Phantoms** *Functional Imaging and Modeling of the Heart*
Kolawole, F., Peirlinck, M., Cork, T. E., Wang, V. Y., Dual, S. A., Levenston, M. E., Kuhl, E., Ennis, D. B.
2021: 305-314
- **Miniature Diamond-Based Fiber Optic Pressure Sensor with Dual Polymer-Ceramic Adhesives** *SENSORS*
Bae, H., Giri, A., Kolawole, O., Azimi, A., Jackson, A., Harris, G.
2019; 19 (9)