

ELIZABETH RENEE MATTHEWS, PH. D.
Senior Post-Doctoral Fellow/Research Scientist
Department of Biochemistry and Molecular Biology
The University of Texas Medical Branch, 224 11th St., Galveston, TX 77555
ermatthe@UTMB.edu

EDUCATION:

June 2021-26 **Post-Doctoral Researcher**

University of Texas Medical Branch-Galveston

Lab of Dr. Michelle Ward

Research Focus: Using induced-Pluripotent Stem Cell-derived cardiomyocytes as a model for understanding the impact of anthracycline toxicity on the chromatin landscape.

May 2021 **Ph. D. in Biochemistry**

University of Houston

Thesis title: *Establishment and Characterization of H19X-loss-of-function Mouse Embryonic Stem Cell Lines*

May 2014 **B. S. in Biochemistry**

University of Houston

Magna Cum Laude

Dec. 2000 **B. S. in Music Education**

Oklahoma State University

POSITIONS AND APPOINTMENTS

June 2026-Current **Researcher/Bioinformatician**

University of Texas Medical Branch-Galveston

Lab of Dr. Michelle Ward

PUBLICATIONS:

Paul, S., Gutiérrez, J. A., Bogar, A. R., **Matthews, E. R.**, & Ward, M. C. (2026). CX-5461 and doxorubicin activate a shared DNA damage-associated transcriptional response in human cardiomyocytes. *G3: Genes|Genomes|Genetics*, 16(3). <https://doi.org/10.1093/g3journal/jkag008>

Matthews, E. R., Abodunrin, R. O., Hurley, J. D., Paul, S., Gutiérrez, J. A., Bogar, A. R., & Ward, M. C. (2025). *Anthracyclines induce global changes in cardiomyocyte chromatin accessibility that overlap with cardiovascular disease loci*. *PLOS Genetics*, 21(10), Article e1011900. <https://doi.org/10.1371/journal.pgen.1011900>

Matthews, E. R., Johnson, O. D., Horn, K. J., Gutiérrez, J. A., Powell, S. R., & Ward, M. C. (2024). *Anthracyclines induce cardiotoxicity through a shared gene expression response signature*. *PLOS Genetics*, 20(2), Article e1011164. <https://doi.org/10.1371/journal.pgen.1011164>

Roacho-Pérez, J. A., Garza-Treviño, E. N., Moncada-Saucedo, N. K., Carriquiry-Chequer, P. A., Valencia-Gómez, L. E., **Matthews, E. R.**, Gómez-Flores, V., Simental-Mendía, M., Delgado-Gonzalez, P., Delgado-Gallegos, J. L., Padilla-Rivas, G. R., & Islas, J. F. (2022). *Artificial scaffolds in cardiac tissue engineering*. *Life*, 12(8), Article 1117. <https://doi.org/10.3390/life12081117>

Matthews, E. R., *Establishment and Characterization of H19X-loss-of-function Mouse Embryonic Stem Cells*, Dissertation, Doctoral dissertation, University of Houston, 2021

Wang, F., Liang, R., Tandon, N., **Matthews, E. R.**, Shrestha, S., Yang, J., Soibam, B., Yang, J., & Liu, Y. (2019). *H19X-encoded miR-424(322)/-503 cluster: Emerging roles in cell differentiation, proliferation, plasticity and metabolism*. *Cellular and Molecular Life Sciences*, 76(5), 903–920. <https://doi.org/10.1007/s00018-018-2971-0>

SYNERGISTIC ACTIVITIES:

MEMBERSHIPS:

American Association for the Advancement of Science
 American Society of Human Genetics
 American Heart Association
 American Women In Science
 American Society for Biochemistry and Molecular Biology
 Gulf Coast Consortia
 Sigma Xi Scientific Honor Society,
 Treasurer of Rice University-Texas Medical Center Sigma Xi Chapter 2025-present

MENTORING:

2021-Current	Participated in mentoring the following UTMB medical/graduate students: John Hurley, Emma Pfortmiller-Elmore, Eduardo Aguirre, Raodah Abodunrin, Kandace Horn, Omar Johnson, Harsha Tamtam, Steven Yu
2019, 2026	Science and Engineering Fair Houston Judge

INVITED LECTURES:

May 2021-2026	Annual lecture on CRISPR technology and new developments, <i>Universidad Autónoma de Nuevo León School of Medicine Graduate Program</i>
Oct. 14, 2021	BRAIN Student Group: Career Panel Discussion, Life after graduation, University of Houston

HONORS:

2023	American Society for Human Genetics Review's Choice Abstract Award
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