



Arianne Caudal

Instructor, Cardiovascular Institute

Bio

BIO

Dr. Arianne Caudal is a postdoctoral fellow at the Stanford Cardiovascular Institute with research interests in cardiac metabolism, disease modeling, and drug discovery. Dr. Caudal received her PhD in Biochemistry from the University of Washington, after conducting thesis work on mitochondrial metabolism and protein-protein interactions in the heart.

ACADEMIC APPOINTMENTS

- Instructor, Cardiovascular Institute

HONORS AND AWARDS

- NIH K99/R00 Pathway to Independence Award, NHLBI (2025 - current)
- NRSA F32 Postdoctoral Fellowship, NIH (2024)
- Postdoctoral Fellowship, American Heart Association (2022)
- Postdoctoral Seed Grant, Cambridge Isotopes (2022)
- TRAM Pilot Grant, Stanford University (2022)
- SUMS Training Seed Award, Stanford University (2021)
- Three Minute Thesis People's Choice Award, University of Washington (2021)
- Predoctoral Fellowship, American Heart Association (2020-2022)

Publications

PUBLICATIONS

- **Inhibition of CXCL10 and IFN- γ ameliorates myocarditis in preclinical models of SARS-CoV-2 mRNA vaccination.** *Science translational medicine*
Cao, X., Manhas, A., Chen, Y. I., Caudal, A., Mondejar-Parreño, G., Zhu, W., Liu, W., Kong, X., Zeng, W., Liu, L., Zhao, S. R., Jahng, J. W., Utz, et al 2025; 17 (828): eadq0143
- **Targeting the CXCL10-IFN- γ Axis to Prevent Myocardial Injury Following mRNA Vaccination**
Nishiga, M., Cao, X., Manhas, A., Caudal, A., Wu, J.
LIPPINCOTT WILLIAMS & WILKINS.2025
- **Unbiased Proteome of Human Myocardium and Serum Sampled at Sudden Death for Discovery of Biomarkers for Near-term Risk of Lethal Arrhythmia**
Caudal, A., Belbachir, N., Kojic, A., Kinkead, B., Tsan, J., Hu, E., Yee, M., Moffatt, E., Connolly, A., Padmanabhan, A., Wu, J., Tseng, Z.
LIPPINCOTT WILLIAMS & WILKINS.2025

- **Generation of two induced pluripotent stem cell lines from Lynch syndrome patients carrying heterozygous MLH1 mutations.** *Stem cell research*
Hu, E., Caudal, A., Yan, C. D., Zha, Y., Ladabaum, U., Wu, J. C.
2025; 88: 103832
- **Modeling heart rhythm using human engineered heart tissues.** *Nature protocols*
Tu, C., Caudal, A., Liu, Y., Narayan, S. M., Wu, J. C.
2025
- **Combinatory Treatment to Alleviate Cellular Stress and Improve Skeletal Muscle Phenotype in Spinal Muscular Atrophy.** *Circulation research*
Zeng, W., Kong, X., Caudal, A., Zhao, S. R., Alamana, C., Melesio, J., Ren, L., Guzman, J., Pang, P. D., Howell, K., Chen, K. S., Day, J. W., Wu, et al
2025
- **Selective inhibition of stromal mechanosensing suppresses cardiac fibrosis.** *Nature*
Cho, S., Rhee, S., Madl, C. M., Caudal, A., Thomas, D., Kim, H., Kojic, A., Shin, H. S., Mahajan, A., Jahng, J. W., Wang, X., Thai, P. N., Paik, et al
2025
- **Generation of two induced pluripotent stem cell lines from breast cancer patients carrying BRCA1 mutations.** *Stem cell research*
Chen, Y. I., Caudal, A., Flores-Banuelos, A. G., Yan, C. D., Park, W. G., Viswanathan, M., Wu, J. C.
2025; 86: 103716
- **¹³C stable isotope tracing reveals distinct fatty acid oxidation pathways in proliferative versus oxidative cells.** *American journal of physiology. Cell physiology*
Ritterhoff, J., McMillen, T., Foundas, H., Palkovacs, R., Poschet, G., Caudal, A., Liu, Y., Most, P., Walker, M., Tian, R.
2025; 328 (1): C168-C178
- **CRISPRi/a screens in human iPSC-cardiomyocytes identify glycolytic activation as a druggable target for doxorubicin-induced cardiotoxicity.** *Cell stem cell*
Liu, C., Shen, M., Liu, Y., Manhas, A., Zhao, S. R., Zhang, M., Belbachir, N., Ren, L., Zhang, J. Z., Caudal, A., Nishiga, M., Thomas, D., Zhang, et al
2024
- **Multiscale drug screening for cardiac fibrosis identifies MD2 as a therapeutic target.** *Cell*
Zhang, H., Thai, P. N., Shivanaraine, R. V., Ren, L., Wu, X., Siepe, D. H., Liu, Y., Tu, C., Shin, H. S., Caudal, A., Mukherjee, S., Leitz, J., Wen, et al
2024
- **Multiscale drug screening for cardiac fibrosis identifies MD2 as a therapeutic target** *Cell*
Zhang, H.
2024
- **Transcriptomic Profiling of Human Myocardium at Sudden Death to Define Vulnerable Substrate for Lethal Arrhythmias.** *JACC. Clinical electrophysiology*
Caudal, A., Liu, Y., Pang, P. D., Maison, D. P., Nakasuka, K., Feng, J., Schwarzer-Sperber, H. S., Schwarzer, R., Moffatt, E., Henrich, T. J., Padmanabhan, A., Connolly, A. J., Wu, et al
2024
- **Harnessing human genetics and stem cells for precision cardiovascular medicine.** *Cell genomics*
Caudal, A., Snyder, M. P., Wu, J. C.
2024; 4 (2): 100445
- **Multidimensional Cross-Linking and Real-Time Informatics for Multiprotein Interaction Studies.** *Journal of proteome research*
Mohr, J. P., Caudal, A., Tian, R., Bruce, J. E.
2024; 23 (1): 107-116
- **Tachycardia-induced metabolic rewiring as a driver of contractile dysfunction.** *Nature biomedical engineering*
Tu, C., Caudal, A., Liu, Y., Gorgodze, N., Zhang, H., Lam, C. K., Dai, Y., Zhang, A., Wnorowski, A., Wu, M. A., Yang, H., Abilez, O. J., Lyu, et al
2023
- **Mitochondrial interactome quantitation reveals structural changes in metabolic machinery in the failing murine heart.** *Nature cardiovascular research*
Caudal, A., Tang, X., Chavez, J. D., Keller, A., Mohr, J. P., Bakhtina, A. A., Villet, O., Chen, H., Zhou, B., Walker, M. A., Tian, R., Bruce, J. E.

2022; 1 (9): 855-866

- **Generation of human induced pluripotent stem cell lines carrying heterozygous PLN mutation from dilated cardiomyopathy patients.** *Stem cell research*
Caudal, A., Mondejar-Parreno, G., Vera, C. D., Williams, D. R., Shenoy, S. P., Liang, D., Wu, J. C.
2022; 63: 102855
- **Human Induced Pluripotent Stem Cells for Studying Mitochondrial Diseases in the Heart.** *FEBS letters*
Caudal, A., Ren, L., Tu, C., Wu, J. C.
2022
- **Upregulation of mitochondrial ATPase inhibitory factor 1 (ATPIF1) mediates increased glycolysis in mouse hearts.** *The Journal of clinical investigation*
Zhou, B., Caudal, A., Tang, X., Chavez, J. D., McMillen, T. S., Keller, A., Villet, O., Zhao, M., Liu, Y., Ritterhoff, J., Wang, P., Kolwicz, S. C., Wang, et al
2022; 132 (10)
- **Increasing fatty acid oxidation elicits a sex-dependent response in failing mouse hearts.** *Journal of molecular and cellular cardiology*
Ritterhoff, J., McMillen, T. S., Villet, O., Young, S., Kolwicz, S. C., Senn, T., Caudal, A., Tian, R.
2021; 158: 1-10
- **Increasing Fatty Acid Oxidation Prevents High-Fat Diet-Induced Cardiomyopathy Through Regulating Parkin-Mediated Mitophagy.** *Circulation*
Shao, D., Kolwicz, S. C., Wang, P., Roe, N. D., Villet, O., Nishi, K., Hsu, Y. A., Flint, G. V., Caudal, A., Wang, W., Regnier, M., Tian, R.
2020; 142 (10): 983-997
- **A novel approach to measure mitochondrial respiration in frozen biological samples.** *The EMBO journal*
Acin-Perez, R., Benador, I. Y., Petcherski, A., Veliova, M., Benavides, G. A., Lagarrigue, S., Caudal, A., Vergnes, L., Murphy, A. N., Karamanlidis, G., Tian, R., Reue, K., Wanagat, et al
2020; 39 (13): e104073
- **Targeting NAD⁺ Metabolism as Interventions for Mitochondrial Disease.** *Scientific reports*
Lee, C. F., Caudal, A., Abell, L., Nagana Gowda, G. A., Tian, R.
2019; 9 (1): 3073
- **Chemical Crosslinking Mass Spectrometry Analysis of Protein Conformations and Supercomplexes in Heart Tissue.** *Cell systems*
Chavez, J. D., Lee, C. F., Caudal, A., Keller, A., Tian, R., Bruce, J. E.
2018; 6 (1): 136-141.e5
- **Mitochondrial protein interactome elucidated by chemical cross-linking mass spectrometry.** *Proceedings of the National Academy of Sciences of the United States of America*
Schweppe, D. K., Chavez, J. D., Lee, C. F., Caudal, A., Kruse, S. E., Stuppard, R., Marcinek, D. J., Shadel, G. S., Tian, R., Bruce, J. E.
2017; 114 (7): 1732-1737