Ronghao Zhang

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EDUCATION

Georgia Institute of Technology & Emory University **Atlanta, GA • 2023 – 2028 (Expected)**
- Ph.D. student in Biomedical Engineering, Wallace H. Coulter Department of Biomedical Engineering
- *(Tentitive) Research Focus:* Cortical processing of touch signals and contribution to tactile behavior in health and disease
- *Adviser:* Dr. Alan Emanuel, Department of Cell Biology, Emory University School of Medicine

Case Western Reserve University **Cleveland, OH • 2019 – 2023**
- Bachelor of Science in Systems Biology, Bachelor of Arts in Computer Science, *Summa Cum Laude*

WORK EXPERIENCE

Emory University School of Medicine, Research Assistant **Atlanta, GA • 2023 – Present**
- *Adviser*: Dr. Alan Emanuel, Department of Cell Biology

University of Chicago, Research Assistant **Cleveland, OH • Summer, 2022**
- *Adviser*: Dr. Sliman Bensmaia, Department of Organismal Biology and Anatomy

Case Western Reserve University School of Medicine, Research Assistant **Cleveland, OH • 2019 – 2023**
- *Adviser*: Drs. Jeffrey Garvin & Agustin Gonzalez-Vincente, Department of Physiology and Biophysics

TEACHING & ADVISING EXPERIENCE

Research Advising and Mentoring

Undergraduate Research Projects, Research Mentor

- Ruorong Qi — Emory University • 2024 – Present

Progression of abnormal signaling in primary somatosensory cortex of MitoPark mice.
Ruorong was selected as a Petit Lanier scholar in 2024 for this work and was funded by the Sartain Lanier Foundation in 2025 to continue this research.

Teaching

Biomed. Data Visual. (BMED8813), Teaching Assistant **Georgia Institute of Technology • Spring, 2025**

Optical Microscopy (BMED6785), Teaching Assistant **Georgia Institute of Technology • Fall, 2024**

Intro. to Neurobiology (BIOL373), Teaching Assistant **Case Western Reserve University • Fall, 2022**

Dynamics of Bio. Systems (BIOL300), Teaching Assistant **Case Western Reserve University • Spring, 2022**

Elementary Programming (ENGR131), Teaching Assistant **Case Western Reserve University • Fall, 2021**

Genes, Evolution & Ecology (BIOL214), Teaching Assistant **Case Western Reserve University • Fall, 2021**

PUBLICATIONS

Preprints

[1] **Zhang, R.**, Shi, S., Jadhav, D.A., Kim, N., Brostek, A., Forester, B.R., Shukla, R., Qu, C., Kramer B., Garvin, J.L., Kleyman, T. R., Gonzalez-Vicente, A. (2024) Abnormal activation of the mineralocorticoid receptor in the aldosterone-sensitive distal nephron contributes to fructose-induced salt-sensitive hypertension. *bioRxiv* https://doi.org/10.1101/2024.08.19.608663

Research Articles

[1] Forester, B.R., **Zhang, R.**, Schuhler, B., Brostek, A., Gonzalez-Vicente, A., Garvin, J.L. (2024) Knocking out Sodium glucose-linked transporter 5 prevents fructose-induced renal oxidative stress and salt-sensitive hypertension. *Hypertension*, *81*(6), 1296-1307. https://doi.org/10.1161/HYPERTENSIONAHA.123.22535

[2] **Zhang, R.**, Jadhav, D.A., Kim, N., Kramer, B., Gonzalez-Vicente, A., on behalf of the Kidney Precision Medicine Project. (2024) Profiling cell heterogeneity and fructose transporter expression in the rat nephron by integrating single-cell and microdissected tubule segment transcriptomes. *Int. J. Mol. Sci.*, *25*(5), 3071. https://doi.org/10.3390/ijms25053071

[3] Brostek, A., Hong, N. J., **Zhang, R.**, Forester, B. R., Barmore, L. E., Kaydo, L., Kluge, N., Smith, C., Garvin, J. L., and Gonzalez-Vicente, A. (2022) Independent Effects of Sex and Stress on Fructose-Induced Salt-Sensitive Hypertension. *Physiological Reports*, *10*(19), e15489. https://doi.org/10.14814/phy2.15489

Conference Abstracts

[1] Jadhav, D. A., **Zhang, R.**, Kramer, B. K., and Gonzalez-Vicente, A. (2024) Transcript deconvolution reveals heterogeneous cell populations in microdissected nephron segments of the rat kidney. *Physiology*, *39*, 831. https://doi.org/10.1152/physiol.2024.39.S1.831

[2] **Zhang, R.**, Shi, S., Kleyman, T. R., and Gonzalez-Vicente, A. (2023) Increased epithelial Sodium channel (ENaC) activity mediates fructose-induced salt-sensitive hypertension. *Journal of the American Society of Nephrology*, *34*(11S), 514. https://doi.org/10.1681/ASN.20233411S1514c

[3] Kramer, B. K., **Zhang, R.**, and Gonzalez-Vicente, A. (2023) Sexually dimorphic transcriptional phenotypes in tubular epithelial cells of the rat kidney. *Hypertension*, *80*(1S). https://doi.org/10.1161/hyp.80.suppl_1.097

[4] **Zhang, R.**, and Gonzalez-Vicente, A. (2023) Addition of fructose to a high-salt diet increases the expression of aldosterone-response genes. *Physiology*, *38*(S1). https://doi.org/10.1152/physiol.2023.38.S1.5733301

[5] Gonzalez-Vicente, A., and **Zhang, R.** (2023) Single-cell transcriptional phenotypes linked to anatomical localization of fructose transporters in rat proximal tubule segments. *Physiology*, *38*(S1). https://doi.org/10.1152/physiol.2023.38.S1.5725750

[6] Brostek, A., Hong, N. J., **Zhang, R.**, Forester, B. R., Barmore, L. E., Kaydo, L., Kluge, N., Smith, C., Garvin, J. L., and Gonzalez-Vicente, A. (2022) Sex and stress in fructose-induced salt-sensitive hypertension. *Hypertension*, *79*(1S). https://doi.org/10.1161/hyp.79.suppl_1.076

ACADEMIC SERVICE & ENGAGEMENT

Talks

- "Dissecting the Role of Dopamine in the Processing of Tactile Signals" 2024
  at *Computational Neuroscience Group Meeting, Department of Biology, Emory University*
- "Addition of fructose to a high-salt diet increases the expression of aldosterone-response genes" 2023
  at *Renal Chalk Talks, Cleveland Kidney Center, Case Western Reserve University School of Medicine*

Poster Presentations

- "Progression of abnormal signaling in primary somatosensory cortex of MitoPark mice" 2025
  at *Larry J. Young Memorial Symposium*
- "Addition of fructose to a high-salt diet increases the expression of aldosterone-response genes" 2023
  at *American Physiology Summit*
- "Single-cell transcriptomics linked to anatomical localization of fructose transporters in rat proximal tubule" 2023
  at *American Physiology Summit*

AWARDS

Prizes

- Poster Award (Zhang et al., 2025) *by Larry J. Young Memorial Symposium* May. 2025
- Abstract of Distinction (Gonzalez-Vicente & Zhang, 2023) *by American Physiology Summit* Apr. 2023
- Outstanding Junior Award *by Case Western Reserve University* Mar. 2022
- Phi Beta Kappa Prize *by Case Western Reserve University* Sep. 2021
- Dean's High Honors *by Case Western Reserve University* 2019-2023

Others

- Petit Scholar Mentor *by Petit Scholar Program, Georgia Tech/Emory CNTP* Jan. – Dec., 2024

Skills

Languages: Chinese - Mandarin (*native*), Chinese - Wu (*native*), English (*professional*), Spanish (*Elementary*)
Technical: Python, MATLAB, R, Java, MySQL, LaTeX, git & Github, Linux & Unix Command Line
Biological: animal ethology, *in vivo* electrophysiology, *in vivo* multiphoton imaging, transcriptomics