

# 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** Chicage, IL • 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,  L<sup>A</sup>T<sub>E</sub>X,  &  Github,  Linux & Unix Command Line  
**Biological:** animal ethology, *in vivo* electrophysiology, *in vivo* multiphoton imaging, transcriptomics