Hui Ji, Ph.D.
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EDUCATION

Ph.D. in Genetics Dec. 2022
Cornell University, Ithaca, NY

B.S. (highest honor) in Biological Sciences (Zhiyuan College) July 2016
Shanghai Jiao Tong University (SJTU), Shanghai, P.R. China

RESEARCH EXPERIENCES

Postdoctoral Fellow Oct 2022 – Present
The Lab of Liqun Luo
Department of Biology, Stanford University, Stanford, CA

- Mechanisms of neural circuit assembly
  – Discovering repulsive ligand-receptor pairs instructing precise neurite patterning of genetically defined neurons in the *Drosophila* olfactory system.
- Method developing
  – Developing biochemical methods to map cell-surface protein interactome in situ in the mouse brain.

Graduate Research Assistant May 2017 – Sept. 2022
The Lab of Chun Han
Weill Institute for Cell and Molecular Biology, Cornell University, Ithaca, NY

- Roles and mechanisms of phagocytosis in neurodegeneration
  – Demonstrated that phosphatidylserine (PS) is an "eat-me" signal on neurons during neurite degeneration.
  – Discovered the role of phagocytosis in driving Wallerian degeneration of dendrites in *Drosophila*.
  – Revealed the role of a secreted protein "Orion" as a bridging molecule between PS and the engulfment receptor Draper during phagocytosis of neurons.
  – Examined the regulation and consequences of PS exposure on healthy sensory neurons of *Drosophila*.
- Tool developing
  – Developed LarvaSPA, a long-term time-lapse live imaging method for *Drosophila* larvae.
  – Contributed to the development of CRISPR-TRiM, a tissue-specific genome-editing tool in *Drosophila*.

Visiting Undergraduate Aug. 2015 – May 2016
The Lab of Chun Han July 2014 – Sept. 2014
Weill Institute for Cell and Molecular Biology, Cornell University, Ithaca, NY

Undergraduate Research Assistant Mar. 2014 – July 2015
The Lab of Shigang He
School of Biomedical Engineering, SJTU, Shanghai, China

PEER-REVIEWED PUBLICATIONS

See also my google scholar page.

- **Ji, H.**, Han, C. (2024). Regulation of neuronal morphogenesis by engulfment. In Yaron, A. & Tran, T. (Eds.), *Wiring the Nervous System: Mechanisms of*

Axonal and Dendritic Remodelling in Health and Disease, River Publishers, pp 137-186 (Peer-reviewed book chapter)

- **Ji, H.**, Wang, B., Labib, D., Lei, J., Chen, X., Sapar, M. L., Boulanger, A., Dura, J., Han, C. (2023). The *Drosophila* chemokine-like Orion bridges phosphatidylserine and Draper in phagocytosis of neurons, *PNAS*, 120(24). p. e2303392120, doi:10.1073/pnas.2303392120
- **Ji, H.***, Sapar, M. L.*, Sarkar, A., Wang, B., Han, C. (2022). Phagocytosis and self-destruction break down dendrites of *Drosophila* sensory neurons at distinct steps of Wallerian degeneration, *PNAS*, 119(4). pii: 2111818119. doi: 10.1073/pnas.2111818119. (* The authors have contributed equally to the work)
- **Ji, H.** & Han, C. (2020). LarvaSPA, A Method for Mounting *Drosophila* Larva for Long-Term Time-Lapse Imaging, *J Vis Exp*, (156). doi:10.3791/60792.
- Poe, A. R., Wang, B., Sapar, M. L., **Ji, H.**, Li, K., Onabajo, T., . . . Han, C. (2019). Robust CRISPR/Cas9-Mediated Tissue-Specific Mutagenesis Reveals Gene Redundancy and Perdurance in *Drosophila*, *Genetics*, 211(2), 459-472.doi:10.1534/genetics.118.301736.
- Sapar, M. L.*, **Ji, H.***, Wang, B., Poe, A. R., Dubey, K., Ren, X., . . . Han, C. (2018). Phosphatidylserine Externalization Results from and Causes Neurite Degeneration in *Drosophila*, *Cell Rep*, 24(9),2273-2286.doi:10.1016/j.celrep.2018.07.095. (* The authors have contributed equally to the work)

PRESENTATIONS

Oral

"Ten-m–capricious interaction mediates heterotypic dendrite segregation in the Drosophila olfactory circuit"

- Cold Spring Harbor meeting: Neurobiology of *Drosophila* Expected Oct. 2025

"Orion bridges phosphatidylserine and Draper in the phagocytosis of somatosensory neurons in Drosophila"

- Annual *Drosophila* Research Conference (Virtual) Apr. 2022
- Cold Spring Harbor meeting: Neurobiology of *Drosophila* (Virtual) Oct. 2021
- Weill Institute Science Round-Up Aug. 2021

"A bridge to recognition: a secreted protein required for phagocytosis"

- Membrane Signaling Group, Cornell University, Ithaca, NY Jan. 2020

"Investigating the role of phosphatidylserine exposure in degenerating and healthy neurons"

- Membrane Signaling Group, Cornell University, Ithaca, NY Apr. 2019

"Dynamic phosphatidylserine exposure is linked to neurite degeneration in Drosophila"

- Superfly Group, Cornell University, Ithaca, NY May 2018
- Membrane Signaling Group, Cornell University, Ithaca, NY Oct. 2017

Poster

"Orion bridges phosphatidylserine and Draper in the phagocytosis of somatosensory neurons in Drosophila"

- Weill Institute Science Round-Up Aug. 2021

"Phagocytosis drives NAD^+ reduction-induced dendrite degeneration in Drosophila"

- Cold Spring Harbor meeting: Neurodegenerative Diseases: Biology & Therapeutics (Virtual) Dec. 2020
- Cold Spring Harbor meeting: Molecular Mechanisms of Neuronal Connectivity (Virtual) Oct. 2020

"Contribution of phosphatidylserine exposure in engulfment of dendrite debris by phagocytes"

- Flash talk, Keck Biomembrane Retreat, Ithaca, NY June 2019
- Flash talk, Annual *Drosophila* Research Conference, Dallas, TX Mar. 2019

"Dynamic phosphatidylserine exposure is linked to neurite degeneration in Drosophila*"*

- Gordon Research Conference on Cell Biology of the Neuron (GRC), Waterville Valley, NH June 2018
- Gordon Research Seminar on Cell Biology of the Neuron (GRS), Waterville Valley, NH June 2018

MENTORSHIP

Trained 26 students/postdocs on confocal microscopy July 2017 – Sept. 2022
Mentored two undergraduates on their honored thesis projects Mar. 2019 – May. 2021

SERVICE

GGD Climate Committee member, Cornell University Aug. 2020 – Sept. 2022
Cell Biology Journal Club coordinator, Cornell University Mar. 2019 – July 2021
GGD Graduate Student Association panelist, Cornell University June 2021
BMCB-GGD Symposium organizer, Cornell University Oct. 2019 – Oct. 2020
Student host for Weill Symposium, Cornell University Oct. 2018

SELECTED PRESS

Cornell Chronicle: Faulty 'eat-me' signal may trigger neurodegeneration 2018

TEACHING EXPERIENCES

TA and guest lecturer, Survey of Cell Biology, Cornell University Spring 2021
TA, Survey of Cell Biology, Cornell University Spring 2018

AWARDS & HONORS

American Heart Association (AHA) Postdoctoral Fellowship Award 2023
Drosophila Image Award Honorable Mention 2023
Cornell CALS Outstanding Teaching Assistant 2022
Hsien and Daisy Yen Wu Scholarship 2022
Cornell Graduate Student Travel Grants 2018, 2019
Cornell Fellowship 2016
Elite Graduate of Shanghai 2016
(awarded to top 5% college or university graduates in Shanghai)
SJTU-Zhiyuan Outstanding Student Scholarship 2016
SJTU-Zhiyuan Best Honored Thesis 2016
SJTU-Zhiyuan Oversea Research Award 2014
Chinese National Scholarships 2014, 2015
(the highest honor awarded to the top 0.2% undergraduate students in China for academic excellence)