Jingwen Li

Cortical Systems & Behavior Laboratory, Department of Psychology, UC San Diego, La Jolla, CA 92122
Phone: (+1) 479-800-4665 Email: jil286@ucsd.edu Website: https://jingwenli.me

Current Position

Aug 2021 – current Postdoctoral Fellow, Department of Psychology, UC San Diego, La Jolla, CA
Research: Neural mechanisms of active vision and social interactions in freely moving marmosets.
Mentor: Dr. Cory Miller; Co-mentors: Dr. Alex Huk (UCLA), Dr. Jude Mitchell (University of Rochester)

Education

2016-2021 Ph.D. **Physics (neuroscience concentration)**, University of Arkansas, Fayetteville, AR
Thesis: The balance of inhibition and excitation and its influence on cortical states and Rett syndrome. Mentor: Dr. Woodrow L. Shew

2013-2016 M.S. **System Theory**, Beijing Normal University, Beijing, China
Thesis: Reconstruction and controllability of complex networks. Mentor: Dr. Wen-Xu Wang

2009-2013 B.S. **System Science**, Beijing Normal University, Beijing, China

Funding

2025-2030 Simons Foundation Autism Research Initiative (SFARI) Fellows-to-Faculty Award.
- Role: PI. Postdoctoral phase: $220,000 for 2 years. Faculty phase: $600,000 for 3 years.
- Title: Neural underpinnings of visual perception and attention in freely moving marmosets influenced by E/I balance and autism.

2025 NIH Pathway to Independence Award (K99/R00) – National Eye Institute (NEI).
- Role: PI. Awarded. Declined in favor of SFARI Fellows-to-Faculty Award.
- Title: Neural mechanisms of active vision in freely moving marmosets.

2023-2025 Kavli Institute for Brain and Mind (KIBM) Postdoctoral Award.
- Role: PI. $100,000 for 2 years.
- Title: Modulation of V1 neurons by visual input and motion in freely moving marmosets.

2020 Hughes Graduate Fellowship.
- Role: PI. $12,200 for 1 semester.
- Title: Disrupted cortical dynamics and motor function in freely moving rats due to E/I imbalance.

Honors and Awards

2025 Simian Collective (SimCo) Young Investigator Award
2025 Simons Foundation Autism Research Initiative (SFARI) Fellows-to-Faculty Award
2025 Emerging Vision Scientist (EVS) Program Participant
2024 Kavli Institute Assembly Early-Career Scientist Representative
2023 Kavli Institute for Brain and Mind (KIBM) Postdoctoral Award

2020 University of Arkansas Hughes Graduate Fellowship
2016 Beijing Normal University Outstanding graduates
2014 National Scholarship of China

Publications

Preprint

Li, J., Singh, V. P., Mitchell, J. F., Huk, A. C., & Miller, C. T. (2026, under revision). Active gaze behavior organizes V1 activity in freely-moving marmosets. *bioRxiv*. [Link]

Lefevre, A., Singh, V. P., Tyree, T. J., **Li, J.**, Duhamel, J. R., & Miller, C. T. (2025, under revision). Primate ACC encodes natural vocal interactions in a 'cocktail party'. *bioRxiv*. [Link]

Peer Reviewed

Singh, V. P., **Li, J.**, Dawson, K., Mitchell, J. F., & Miller, C. T. (2025). Active vision in freely moving marmosets using head-mounted eye tracking. ***Proceedings of the National Academy of Sciences***, *122*(6), e2412954122. [Link]

Li, J., Aoi, M., & Miller, C. T. (2024). Representing the dynamics of natural marmoset vocal behaviors in frontal cortex. ***Neuron***, *112*(21), 3542-3550. [Link]

Yuan, Z., **Li, J.**, Shen, Z., Hu, L., & Zhao, C. (2023). Control core of undirected complex networks. ***Physica A: Statistical Mechanics and its Applications***, *620*, 128762. [Link]

Li, J., Kells, P. A., Osgood, A. C., Gautam, S. H., & Shew, W. L. (2021). Collapse of complexity of brain and body activity due to excessive inhibition and MeCP2 disruption. ***Proceedings of the National Academy of Sciences***, *118*(43), e2106378118. [Link]

Li, J., & Shew, W. L. (2020). Tuning network dynamics from criticality to an asynchronous state. ***PLOS Computational Biology***, *16*(9), e1008268. [Link]

Kells, P. A., Gautam, S. H., Fakhraei, L., **Li, J.**, & Shew, W. L. (2019). Strong neuron-to-body coupling implies weak neuron-to-neuron coupling in motor cortex. ***Nature Communications***, *10*(1), 1-13. [Link]

Li, J., Shen, Z., Wang, W. X., Grebogi, C., & Lai, Y. C. (2017). Universal data-based method for reconstructing complex networks with binary-state dynamics. ***Physical Review E***, *95*(3), 032303. [Link]

Li, J., Yuan, Z., Fan, Y., Wang, W. X., & Di, Z. (2014). Controllability of fractal networks: An analytical approach. ***EPL (Europhysics Letters)***, *105*(5), 58001. [Link]

Reviews and Book Chapters

Shew, W. L., **Li, J.**, Gautam, S. H. (2025). Chapter: High density multi-electrode array electrophysiology in awake animals. *The handbook of electrophysiology: a practical guide for neurophysiologists*. World Scientific Publishing.

Invited Talks

Jul 2027 Eye Movements Gordon Research Conference, Mount Holyoke College, South Hadley, MA. "Active gaze behavior in freely moving marmosets."

Jun 2026 Simons Foundation 2026 Fellows-to-Faculty Retreat, New York, NY. "Neural Mechanisms of Active Vision in Freely Moving Marmosets."

Oct 2025 Center of Neuroscience, University of Pittsburgh, Pittsburgh, PA. "The role of active vision in freely moving marmosets."

Sep 2025 Johns Hopkins Kavli Neuroscience Discovery Institute (Kavli NDI) - X Speaker Series, Johns Hopkins, Baltimore, MD. “The role of active vision in freely moving marmosets.”

Sep 2025 Psychology Research Symposium, Department of Psychology, UCSD, San Diego, CA. “The role of active vision in freely moving marmosets.”

Aug 2025 Simian Collective 2025 Young Investigator Award Talk, Durham, NC. “The role of active vision in freely moving marmosets.”

May 2025 Vision Science Society 2025, St. Pete Beach, FL. “The role of active vision in primary visual cortex of freely moving marmosets.”

Jun 2024 Kavli Institute for Brain and Mind (KIBM) Annual Symposium on Innovative Research 2024, San Diego, CA. “The role of active vision in primary visual cortex of freely moving marmosets.”

Sep 2023 Simian Collective 2023, Chicago, IL. “The role of active vision in primary visual cortex of freely moving marmosets.”

Feb 2023 Shew Laboratory, Department of Physics, University of Arkansas, Virtual. “Population encoding and decoding of frontal cortex during natural communication in marmosets.”

Jan 2023 Cognitive Neural Systems Meeting, Department of Psychology, UCSD, San Diego, CA. “Population encoding and decoding of frontal cortex during natural communication in marmosets.”

Oct 2022 Air Force Office of Scientific Research (AFOSR) Cognitive & Computational Neuroscience Program Review 2022, Arlington, VA. “Visually-guided primate predation: a computational neuroethology of visual search and targeting in a complex, natural environment.”

Conferences (selected)

Poster Teasers

SimCo2024, Pittsburgh, PA. “The role of active vision in primary visual cortex of freely moving marmosets.”

Kavli Institute Assembly 2024, Los Angeles, CA. “The role of active vision in primary visual cortex of freely moving marmosets.”

Posters

SfN2025, San Diego, CA. “The role of active vision in primary visual cortex of freely moving marmosets.”

EVS2025, Washington, D.C. “Active vision of freely moving primates in natural exploration.”

SfN2023, Washington D.C. “The role of active vision in primary visual cortex of freely moving marmosets.”

Marmoset Bioscience Symposium 2023, Washington D.C. “The role of active vision in primary visual cortex of freely moving marmosets.”

Cosyne2023, Montreal, Quebec, Canada. “Population encoding and decoding of frontal cortex during natural communication in marmosets.”

SfN2022, San Diego, CA. “Modulation of V1 neurons by visual input and motion in freely moving marmosets.”

APAN2022, San Diego, CA. “Population encoding and decoding of frontal cortex during natural communication in marmosets.”

Marmoset Bioscience Symposium 2022, San Diego, CA. “Population encoding and decoding of frontal cortex during natural communication in marmosets.”

SfN2021, Chicago, IL (virtual forum). “Collapse of complexity of brain and body activity due to excessive inhibition and MeCP2 disruption.”

FENS2020, London, UK (virtual forum). “Stereotypy of intracortical and cortex-body interactions due to MECP2 disruption and imbalance of excitation and inhibition.”

SfN2018, San Diego, CA. “Inhibitory modulation of network dynamics: from criticality to tight balance.”
NetSci2017, Indianapolis, IN. “Inhibitory modulation of network dynamics: from criticality to tight balance.”
SfN2016, San Diego, CA. “Computational model on spatial-temporal response of primary visual cortex to contour stimuli.”

Professional Services

Ad Hoc Reviewer:

Journals: *Scientific Reports, eNeuro*, *Experimental Brain Research*, *Neuroscience and Behavioral Physiology*, *Annals of Neuroscience*, *Journal of Advanced Transportation*, *Chinese Physics B*

Conferences: Computational and Systems Neuroscience (Cosyne) 2025

Grants: Sanford Institute's 2026-2027 Fellowship Program

Junior Editorial Board

2025-current *Neuroscience and Behavioral Physiology*

Conference/Symposium Organizer

2024 Kavli Institute for Brain and Mind (KIBM) Annual Symposium

2026 California Marmoset Meeting

Teaching and Mentoring

2021-current Mentoring students and volunteers in Miller lab at UCSD

Sania Edlabadkar, master student in Computer Science (2025-2026)

Annabelle Lee, undergraduate student in Biochemistry and Marine Science (2023-2026)

Maryam Al-Kaabi, post-baccalaureate volunteer majored in Biology (2025)

Jamie Park, undergraduate student in Psychology (2024)

Kayla Wu, undergraduate student in Psychology (2023)

Zhenni Zhang, undergraduate student in Human Biology (2022-2023)

Marissa Garcia, rotational PhD student in Neuroscience (2021)

Fall 2025 Simons Foundation SURFiN Mentor Training series, virtual

Attending workshops on providing effective mentorship and fostering a supportive research environment.

Spring 2025 Torrey Pines Academic Lab Management & Leadership Symposium, San Diego, CA

Attending 4-day workshops on developing lab leadership and vision, managing communication and conflicts, building an effective team, recruiting and sustaining the lab.

Spring 2025 Foundations of Teaching Workshops, UCSD, San Diego, CA

Attending 5-week workshops introducing foundational concepts and skills for student-centered teaching.

2023-2024 Science of Teaching and Learning (SoTL) journal club, UCSD, San Diego, CA

Literature reading and discussion on evidence-based teaching.

2016-2021 Teaching assistant, Department of Physics, University of Arkansas, Fayetteville, AR

University physics lab instructor: instructing students on lab activities and grading lab reports.

College physics drill instructor: instructing students on practice problems and grading tests.

Professional Associations

2025-current Postdoctoral Fellow of Simons Foundation Autism Research Initiative (SFARI)
2025-current Member of Vision Science Society (VSS)
2023-2025 Postdoctoral Fellow of Kavli Institute for Brain and Mind (KIBM)
2016-current Member of Society for Neuroscience (SfN)

Advocacy and Outreaches

Sep 2025 Emerging Vision Scientist (EVS) Program, Washington, D.C.

Attending advocacy training; presenting research; educating congressional members and staff about the importance of vision research.

2024-2025 Letters to a Pre-Scientist – STEM Pen Pal Program

Exchanging letters with students from low-income schools to humanize STEM professionals and encourage STEM careers by sharing personal journeys.

2023-2024 Science Class: Jail Outreach Program – Writing Support Group

Writing grant applications for the program; designing class reflection survey; analyzing survey data.